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CONDITIONING
ERATION
the Industry

NEWS

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Inside Dope

By GEORGE
F. TAUBENECK



Learn to live and laugh —
thus delay your epitaph

Stories of the Week

New Type of Air
Conditioning

Gag of the Week

Oh How I Miss You

Tonight—Also This

Morning and Afternoon

Practical Damage

Australian Interlude

Stories of the Week

"Poor people are welcome al-
ways in this church," the rever-
end post-offertoried.

"Judging by the collections,
they are here in large numbers."

Jack Sweet submits this one:

A drawing was held at the
annual banquet of the National
Appliance & Radio-TV Dealers
Association to determine what
woman would get the \$500
Christian Dior gown presented
by Westinghouse Electric Corp.

The winner: a lady whose
husband is with Central Ken-
tucky Natural Gas Co., Lexing-
ton.

New Type of Air Conditioning

News Item from the United
Press:

LONDON, Jan. 27—Queen
Elizabeth II and the Duke of
Edinburgh leave wintry Eng-
land today for a state visit to
equatorial Nigeria, where the
royal suite will be cooled by a
deepfreeze unit.—Detroit News.

Gag of the Week

News that the U. S. plans to
launch a space satellite to circle
the globe every few hours gives
us pause. Does John Foster
Dulles intend to resign?

Oh How I Miss You Tonight—Also This Morning and Afternoon

Next to the mother-in-law
theme, nothing is so overworked
by cartoonists as the bored wife
who can't see her husband's
face behind his newspaper.

Gentlemen, those wives don't
know when they're well off. For
nearly seven weeks—through
December and January—all
three Detroit newspapers were
on strike. And housewives by
the thousands grew so tired of
looking at their husband's blank
unadorned faces across the
breakfast table that a new social
problem was in the making.

Unexpected strains on the Tie
that Binds weren't the only up-
(Concluded on Page 14, Col. 1)

The Most Important Fact In Our Business Today

By George F. Taubeneck

SHREWD INVESTORS nowadays have a new yard-
stick-of-values. To be sure, they still appraise financial con-
dition, policy probity, manufacturing excellence, product
design, and general reputation, as heretofore.

Currently, though, there's a factor which outweighs all
others: *Quality and loyalty of distribution.* When invest-
ment counselors give advice, they base their predictions of
business success upon *customer relationships* and *calibre of
dealers* more than upon bricks-and-mortar or present cor-
porate solvency.

Why did Packard marry Studebaker, and incur the
headaches of the latter's inbuilt labor problems and ivy-
league plant? Reason: Studebaker brought to the marriage
a dowry of strong dealers, which Packard needed desper-
ately. Furthermore, it has been said that American Motors
absorbed ailing Hudson partly to acquire the latter's dis-
tribution facilities, as well as to effect manufacturing
economies.

Why did Carrier purchase Bryant? Not primarily for
the latter's engineering know-how, nor to acquire manage-
(Concluded on Page 20)

Lennox Offers A-P Controls and 2-Ton Home Unit to Soreng Products Builders for \$300 Announce Merger

CHICAGO—A new 2-ton self-
contained air-cooled residential
air conditioning unit that can
be sold to builders at around
\$300 was announced by Lennox
Industries, Inc. at the National
Association of Home Builders
exposition here recently.

John Norris, Lennox presi-
dent, declared at a press con-
ference, that the unit will per-
mit the builder to offer both
heating and cooling in a 1,200-
sq. ft. home, well built and with
walls and ceiling insulated, for
\$1,000.

Norris claims several new fea-
tures, in addition to its econo-
my, for the "Stowaway," as the
air-cooled unit is called.

(Concluded on Page 41, Col. 3)

Lehigh Ups Auto Cooling Compressor Output 5 Times

LANCASTER, Pa. — Produc-
tion of Lehigh Mfg. Co.'s V-93
compressor for automotive air
conditioning has been expanded
five times and will continue on
a year-round basis, the com-
pany announced recently.

Significant improvements in
weight, strength, balance, speed,
and general operation have been
made in the unit, the company
said. Two full years in the de-
sign stage, the V-93 was con-
ceived solely for automobile air
conditioning applications, the
manufacturer asserted.

Increased production on the
new model started on last Dec.
5.

Principal engineering changes
(Concluded on Page 41, Col. 2)

SCHILLER PARK, Ill.—Louis
Putze, president of Soreng
Products Corp. here, and Roy
W. Johnson, president of A-P
Controls Corp., Milwaukee,
jointly announce that their two
companies have merged to form
the newly-created Controls Corp.
of America.

The new corporation "com-
bines the facilities and talents
of two successful companies,
with combined 1955 sales of
about \$25,000,000," it was
stated.

This new corporation will be
headed by Putze as president,
and Johnson as chairman of the
board. Each company forming
this new corporation will retain
its individual identity and will
continue to operate as a division
under its present name.

"The diversified product line
(Concluded on Page 4, Col. 1)

Westinghouse Will Add Room Units Made by Sutton

SPRINGFIELD, Mass. — To
help their distributors and deal-
ers meet the heavy demand for
1956 room air conditioners,
Westinghouse has announced a
plan to supplement the produc-
tion of units scheduled in the
strike-bound East Springfield
plant.

According to F. H. Hildreth,
manager of refrigeration spe-
cialties, two low-priced 3/4-hp.
and 1-hp. models will be added
to the previously announced
1956 Westinghouse line.

These new models will be pro-
duced to Westinghouse specifica-
tions by O. A. Sutton Corp.,
(Concluded on Page 4, Col. 5)

Air Conditioning Cuts Danger Of Air Pollution, ASHAE Told

S. E. Lauer Sees 13% Sales Rise For York In '56

YORK, Pa.—York Corp.'s pro-
gram for 1956 anticipates a
sales increase in air condition-
ing and refrigeration products
and systems of between 12%
and 13% over the past year for
a total of about \$94,000,000,
Stewart E. Lauer, president,
told stockholders.

Of this amount, 75% will be
for air conditioning products
and 25% for refrigeration, he
said.

This program excludes any
major defense contracts. Lauer
said that at present the firm has
several pilot contracts with long
range possibilities which could
result in the booking of a major
defense contract during the
year.

He reported new business
booked in the first quarter ended
Dec. 31, 1955 at \$16,500,000—up
about 44% from the same
(Concluded on Page 2, Col. 3)

Marvair Expands Room Unit Line

MUNCIE, Ind.—Marvair Div.
of Muncie Gear Works, Inc., is
expanding its line of remote air-
cooled air conditioners with the
addition of two new models, ac-
cording to Marvin M. Smith, vice
president. He also announced
two executive appointments.

David B. Dell has been named
sales manager for the western
division, and Clarence M. Ehr-
hardt sales manager for the
eastern division of Marvair.
Both will work out of the gen-
eral offices at Muncie.

The new Marvair remote units
are an economy 2-hp. model de-
livering 21,000 B.t.u./hr. and a
5-ton unit delivering 60,000
(Concluded on Back Page, Col. 1)

CINCINNATI—Air pollution
is one of the great problems and
hazards of city living today—
but the air conditioning indus-
try can be a major factor in
providing at least partial solu-
tions to the problem and in
minimizing the dangers from air
pollution.

This was brought out at the
Air Pollution symposium held
during the recent annual meet-
ing of the American Society of
Heating & Air Conditioning En-
gineers here.

And no matter what is done
about the products of combus-
tion that come from industrial
plants, the problem is likely to
become worse, because the finger
of suspicion now points to the
exhaust from automobile en-
gines, as possibly the greatest
and most dangerous factor in
air pollution.

In fact, Dr. C. A. Mills, a
professor in a medical school in
Cincinnati who has specialized
in the effects of the weather and
(Concluded on Back Page, Col. 2)

'55 Refrigerator Shipments Up 21% Over '54 CRMA Says

CHICAGO—Shipments of
commercial refrigerators in 1955
by manufacturer members of
the Commercial Refrigerator
Manufacturers Association broke
all previous records, according
to a special report just issued
by CRMA headquarters here.

The commercial refrigerator
group's over-all net increase
over 1954 was 20.83%, the re-
port revealed, and total produc-
tion exceeded the previous peak
year—1950—by nearly 14%.

In several instances, it was
pointed out, individual manu-
facturers were operating to the
full limit of their production
facilities. These were reported
to be planning to expand their
facilities to absorb continued
(Concluded on Page 4, Col. 3)

BEHIND PAGE ONE . . .

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Salesmen Need Objectives, Enthusiasm,
Recognition, and Rewards 8

Residential Air Conditioning

Minneapolis Installs 511 Systems in '55;
Existing Home Market Shows Rapid Growth 10

Built-In Boom

It Gives Rise to New Manufacturing,
Design, and Distribution Concepts 13

Remote Air Conditioners

Trend To Packaged Units Seen on Way
To Reversing Itself on Some Applications 15

Flexible Year-Round System

200-Hp. System Allows Individual
Thermostatic Control in Many Offices 16

Builders Show Pictures

Auto Air Conditioning 34, 38

What's in a name?

QUALITY

...if the Name is

**READING
COPPER TUBING**FOR REFRIGERATION
& AIR CONDITIONING
EQUIPMENT**READING TUBE CORPORATION**EMPIRE STATE BUILDING, NEW YORK 1, N. Y.
WORKS, READING, PA.**Lauer of York Tells Why '56 Sales Will Improve**

(Concluded from Page 1)

period a year ago. The backlog of unfilled orders at the end of the first quarter amounted to about \$34,000,000 compared with \$21¼ million at the same time last year, an increase of 53%.

In both years the backlog includes a small amount of defense and other orders extraneous to the company's normal line of air conditioning and refrigeration in the amount of about \$1,500,000. Thus the pick-up in the backlog is in the company's normal lines.

York To Add 400 Men

There were 300 more employees on the payroll in York at the end of December than at the same time a year ago, and it is expected that there will be 400 more added by Feb. 20.

Lauer said that completed

sales and billings in the first quarter fell short of their anticipated program by \$3,400,000. Most of this reduction is found in the Industrial Div. which handles large contracts covering field assembled systems.

The completion of these contracts was slowed down by reason of strikes, principally at Westinghouse and the copper companies, according to Lauer. This delayed completion of certain factory products on schedule and certain power components which are shipped direct to the job in the field, he stated.

Strikes Delayed Contract Completions

But even more important, he said, are the delays in the progress of customers' buildings due to the shortage of struc-

tural steel. He said in fact that some buildings were being converted from structural steel to reinforced concrete in order to gain completion at the earliest date.

First Half Seen Ahead of '55 Period

As a result, net sales in the first quarter will amount to about \$13,500,000 compared with \$12,900,000 a year ago and will produce a net loss of about \$100,000 compared with \$393,000 during the same period a year ago. Lauer predicted that the results for the first six months will be substantially ahead of a year ago in both sales and profits and that the last six months should be at least equal to or slightly better than the same period last year.

In discussing the long range possibilities, Lauer said the company had made some very careful studies of the industry and its potential growth through 1960.

Sees 12% per Annum Rise for 5 Years

Based on York Corp.'s ability to maintain or slightly better its past two or three years' historical percentage of the industry in terms of its pattern of shipments and billings, an increase at the rate of 12% per annum for the next five years looks possible, he said.

As to expansion in the year ahead, Lauer said it was possible that the company would commit itself for expenditures aggregating upwards of \$6,000,000 for increasing production capacity mainly through new tooling, rearrangement, and rehabilitation for the most effective use of floor space, for new products and cost reduction in the York plants; and through the probable acquisition of existing establishments of other companies, the products of which can be integrated with their growth planning and because of the contra-seasonal nature of the business should help straighten out the sales and earning curve of the company.

This figure is over and above their regular capital expenditures covering normal repair and replacement within their depreciation budget, it was pointed out.

Following the annual meeting of stockholders, the board re-elected Lauer president for 1956. This is Lauer's 17th term.

Detroit ASRE To Hear O'Malley Feb. 6

DETROIT—The Detroit section of the American Society of Refrigerating Engineers will hear Don J. O'Malley of the Michigan Bell Telephone Co. tell about those "Fabulous Midgets—The Transistor and the Bell Solar Battery" at 8 p.m. Monday, Feb. 6 in the Rackham building.

Dinner at 6 p.m. in main dining room of the Engineering Society of Detroit is optional. Reservations for dinner are to be made before noon Monday with Frank Drogosch.

there's an



of a BIG DIFFERENCE

in the

NEW**KRAMER****THERMOBANK****Here are the major improvements**

A NEW HEAT SOURCE - Instead of using only the sensible heat of the THERMOBANK, the new "L" THERMOBANK now utilizes both its sensible heat plus its latent heat of fusion by actually freezing a tube of ice around its reevaporator coil during the defrost. (The "L" stands for latent). This, coupled with significant improvements in the design of the reevaporator coil, gives the "L" THERMOBANK four to five times more heat storage for instant defrost and complete reevaporation.

NO LIQUID REFRIGERANT TO COMPRESSOR - With the vastly larger amount of heat now available in the "L" THERMOBANK, no liquid can return to the compressor during defrost. This is a singular and distinctive feature of the "L" system vastly different from any other automatic hot gas defrost system now available.

CONSTANT CRANKCASE PRESSURE - The "L" system maintains a predetermined low crankcase pressure, thus permitting

the use of standard low temperature compressors without danger of motor overloading during the defrost, or oil foaming upon resumption of the refrigeration cycle. The low temperature compressors are less costly since they deliver more Btu's per horsepower.

NO EXTRA SUPERHEAT DUE TO REEVAPORATOR - On larger systems the suction line by-passes around the THERMOBANK during normal operation, thus eliminating any superheat pick-up from the bank by the suction gases during normal operation. This is very important with F-22.

"LOW-LOW" TEMPERATURES - Extremely low temperatures are now achieved with the "L" THERMOBANK and a complete line of "Low-Low" systems are now available.

NO WINTER PROBLEMS - The "L" THERMOBANK can be housed in an unheated space, thus making possible the use of the "L" THERMOBANK in any location, even the arctic circle.

KRAMER TRENTON CO. • Trenton 5, N.J.

Norge Predicts Larger Refrigerators for King-Size Mobile Homes

CLEVELAND — "Now that trend is to roomier mobile homes," Joseph P. Halpin, builder division manager of Norge Div., Borg-Warner Corp., predicted here recently that all units over 45 ft. made this year will be equipped with eight or 10-ft. refrigerators.

Halpin declared the 30,000 new king-size moving homes that will roll the highways are prime prospects for household appliances.

Forecasting more and more appliances in trailers, Halpin asserted provision will be made for automatic washers and gas dryers "to provide the mobile homemaker with all conveniences."

New Kelvinator Post To Styling Expert

DETROIT—In a move to expand and strengthen appliance styling, Kelvinator has created a new position of director styling, B. A. Chapman, vice president and general manager of Kelvinator, announced recently.

Randall D. Fautot will head the styling department, which formerly was part of the engineering department, but now will report directly to Chapman. Fautot will be responsible for current production styling and planning as well as advanced styling for future models.

For the past eight years, Fautot was engaged in exterior styling for Studebaker Div., Studebaker-Packard Corp. At the time of his leaving the automobile firm, he was manager of exterior styling.

Whirlpool-Seeger To Make Units In Italy

ST. JOSEPH, Mich. — Whirlpool-Seeger rotary compressors for refrigerators, freezers, and air conditioners, will be produced in Italy for Italian markets, by Officine Galileo, under terms of a licensee agreement with Whirlpool-Seeger Corp., it was announced by Robert M. Mitchell, vice president of Whirlpool-Seeger.

Initial production of $\frac{1}{8}$, $\frac{1}{6}$, and $\frac{1}{4}$ -hp. refrigerator compressors is planned for early 1956 with parts and technology provided by Whirlpool-Seeger. By 1957 it is expected that all Italian units will be manufactured completely by Galileo.

Engineers of the Italian firm are now studying Whirlpool-Seeger methods as part of the technical assistance agreement.

Air-Way Co. Official Seeks Voting Control Of F. L. Jacobs Co.

DETROIT—Options to secure "substantial stock interests in, and effective voting control of the F. L. Jacobs Co. from the principal officers, directors, and largest stockholders" have been acquired by Edward Lamb, chairman of the board of Air-Way Industries, Inc., Toledo.

The announcement was made by Frank C. Oswald, executive vice president of Edward Lamb Industries, Inc., Toledo.

The option will extend for a period of about 30 days. In the meantime, Lamb's auditors, attorneys, and engineers will "study the Jacobs picture with the intentions of expanding its electronics, automotive parts," according to Oswald.

Two of Jacobs' subsidiaries

are Mills Industries, Inc., vending machine manufacturer, and Selmix Dispensers, Inc., maker of syrup and soda dispenser units.

Edward Lamb Industries owns a string of radio and television stations, a newspaper, and some manufacturing concerns.

In 1954, the Lamb interests acquired control of Air-Way Industries, formerly Air-Way Electric Appliance Corp., manufacturer of vacuum cleaners. Last year, a group headed by Lamb and the company he controls (Edward Lamb Industries) bought more than 100,000 shares of stock in Seiberling Rubber.

Frank E. Howard, board chairman, heads the current Jacobs management, which took over control of the firm in December, 1952. The present management is controlled by a New York stockholder group, it was reported.

BOHN

ALUMINUM refrigeration tubing



Bulk • Patterns • Specified Lengths
with or without connectors

More and more refrigeration manufacturers are converting to aluminum tubing. They have found it helps them reduce costs substantially. They have also found conversion is much simpler, more trouble-free when they deal with an experienced tubing manufacturer. If you are considering converting to aluminum or if you would like all the money-saving facts, call on Bohn. You are assured the same high quality tubing that goes into Bohn evaporators—plus the experience and facilities to provide it in the form best suited for your production methods.

TUBING • CONNECTORS • EVAPORATORS • FREEZER PLATES



BOHN CONNECTORS are flash-butt welded aluminum and copper tubing. They are then 100% inspected by two tests: (1) Flex test checks the strength of the bond. (2) Pressure test under water makes sure the bond is gas tight.

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SALES OFFICES: Boston, Chicago, Cleveland, Dayton, Detroit, Indianapolis, Milwaukee, Minneapolis, Moline, New York, Philadelphia, Rochester, St. Louis

For more information about products advertised on this page use Information Center, page 28.



LOUIS PUTZE



RAY JOHNSON

Soreng, A-P Merger

(Concluded from Page 1, Col. 3) resulting from this merger greatly improves this new corporation's ability to more fully serve the interests of the home laundry, home heating, commercial refrigeration, air conditioning, and automotive industries," the announcement said.

"Manufacturing facilities of this new corporation comprise eight manufacturing plants in the United States, Canada, and Europe, with a total floor space of more than 500,000 sq. ft.

"Coordination of purchasing of common components and material, together with centralization of specific processes wherever possible, will offer economies in manufacturing beneficial to its customers.

"Greater diversification and more efficient engineering will be available through the integration of the research and engineering facilities of both companies."

The combined staff of the two control manufacturers totals more than 150 product and development engineers, it was pointed out.

For more than 25 years, A-P Controls has been specializing in the design and manufacture of room thermostats, vaporizing oil burner controls, gas burning controls, refrigeration controls, and similar items. These products are widely used in the home heating, commercial refrigeration, air conditioning, and automotive fields and in many industrial applications.

A-P Controls is a large producer of expansion valves and other controls for the refrigeration and air conditioning industries, and of constant-level

valves for vaporizing oil heaters and furnaces.

Most recently, this division has developed and introduced a new type of integrated gas control for the gas heater and furnace industry.

Manufacturing facilities of this division consist of five plants located in the United States, Canada, and Europe.

Soreng Products has been in existence for more than 30 years and is a supplier of components for the home laundry, refrigeration, air conditioning, and automotive industries.

This division operates three manufacturing plants. Its Engineering Dept., occupying its own building, specializes in the research, design, and development of solenoids, manual and automatic switches, automatic timers, automatic gas controls, shaded-pole motors, and other electrical components.

In the field of "ultra-precision" products, Soreng manufactures solenoid-operated valves for jet aircraft and guided missiles.

Commercial Sales--

(Concluded from Page 1, Col. 5) growth, and at least one new production facility is being projected for this year.

The rapid expansion of frozen food distribution over the past several years was reflected by an increase in shipments of self-service open-type frozen food display equipment of nearly 43%.

Frozen food merchandising equipment accounted for 29.2% of the total commercial refrigerator volume done by CRMA members last year, compared with 24.7% in 1954.

A poll of the CRMA membership forecasts an increase of 10 to 15% in total production

of commercial refrigerators of all types during 1956. Demand during the first half is expected to exceed the first half of 1955 by about 20%, after which some softening may develop, due to an indicated deceleration of commercial construction and possible credit restrictions later in the year.

St. Louis Dailies Agree To Ban 'Factory Outlet' Ads

ST. LOUIS—The local Better Business Bureau reported recently that the two St. Louis daily newspapers have agreed to reject advertising which includes such phrases as "factory outlet," "direct factory outlet," and "buy direct and save."

Such phrases imply that the factory has a direct interest in the retail business that would enable advertisers to offer merchandise for lower prices, according to the bureau.

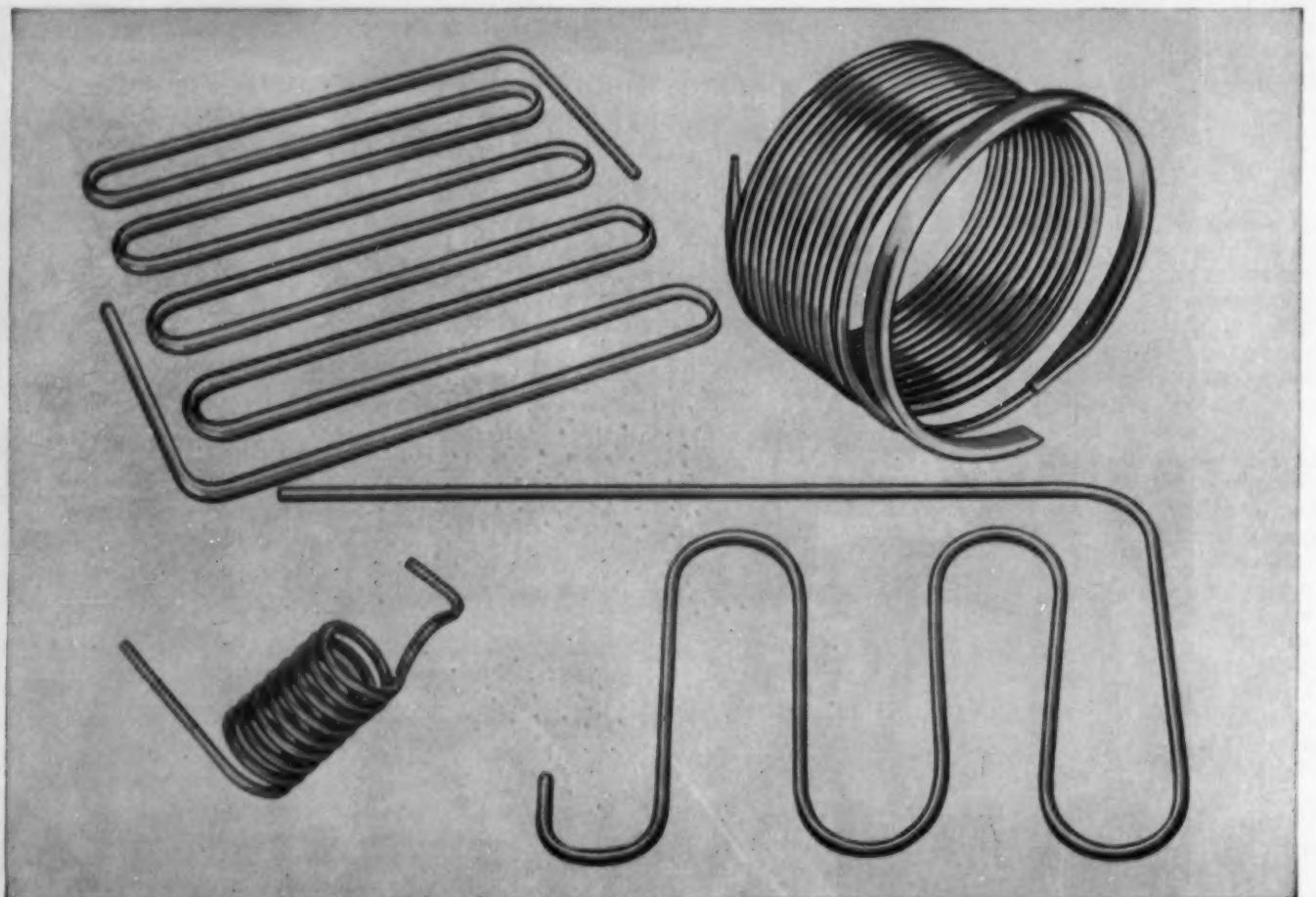
Westinghouse--

(Concluded from Page 1, Col. 3) Wichita, Kan. These units are in addition to 3/4-hp. casement window model and 2-hp. room units at the present time being produced for Westinghouse by Sutton.

Hildreth said: "The expansion of our contract with Sutton in no way alters production plans for 1956 Westinghouse special, deluxe, and custom models in the Springfield plant but are needed to support the heavy demand for Westinghouse room air conditioners and to meet specific marketing conditions.

Full details and prices will be announced at a later date.

Hildreth reaffirmed the company's policy that all units will be marketed and priced competitively.



You get more than peace of mind with Bundyweld Tubing—much more

Surrounded by Cleveland

Heart of downtown—only minutes away from everything. 800 beautifully decorated, spacious rooms and suites—each with private bath and radio.

Room Rates from \$4

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Famous for fine
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Six outstanding
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Garage open
round the clock.

Excellent facilities for
Conventions and
Special Events.

ROBERT P. JOYCE,
General Manager



WHY BUNDYWELD IS BETTER TUBING



Bundyweld starts as a single strip of copper-coated steel. Then it's...



continuously rolled twice around laterally into a tube of uniform thickness, and



passed through a furnace. Copper coating fuses with steel. Result...



Bundyweld, double-walled and brazed through 360° of wall contact.



NOTE the exclusive Bundy-developed beveled edges, which afford a smoother joint, absence of bead, and less chance for any leakage.

SIZES UP
TO 3/4" O.D.

Whirlpool-Seeger Plans To Make New Freezer Line In Harvester Plant

EVANSVILLE, Ind. — Whirlpool-Seeger Corp. recently took official possession here of the 972,000-sq. ft. plant purchased last September from International Harvester Co.

An initial crew of approximately 250 mechanics and maintenance and utility men began preparing lines for production of horizontal and vertical food freezers which will be sold nationally under the brand name of RCA Whirlpool.

Preparatory work includes the setting up of press operations, metal fabrications, paint and porcelain facilities, and sub-assembly.

Krueger announced that hereafter the former Seeger property will be designated as Plant No. 1, and the former Harvester facility as Plant No. 2.

Formal annexation of the Harvester property makes the Evansville operation currently the largest in point of working area and employment of the seven divisions of Whirlpool-Seeger located in Minnesota, Michigan, Indiana, and Ohio, Krueger stated.

The Evansville division now comprises slightly more than two million square feet of manufacturing space on 97 acres. Employment, which is currently at around 4,000, should increase to approximately 4,300 within the next two or three weeks.

Krueger stated that while initial use of Plant No. 2 will be devoted to the production of RCA Whirlpool food freezers, it will eventually be utilized also for turning out a full line of household refrigerators.

Business Groups Ask Congress Not To Reverse Court on Warranty Ruling

WASHINGTON, D. C. — Appliance manufacturers and other business groups are quietly trying to convince Congress it shouldn't reverse the ruling of the U. S. Court of Claims in the so-called "Frigidaire case," according to the *Wall Street Journal*.

The court held that a company which sells an item subject to excise tax is entitled to a refund of a portion of the tax on any repair or replacement costs that it has, under a warranty, included in the original sale price.

Treasury and Congressional tax staffs recently recommended to a House Ways and Means subcommittee considering technical changes in excise tax laws that Congress pass legislation

stating that the decision is not in accord with the intent of Congress and that no tax refund is in order in such cases as these.

Refund claims totaling several million dollars have been filed since the Frigidaire decision was issued in June, 1954.

"Business groups have become alarmed over the Treasury and Congressional staff recommendation, and have started contacting members of the subcommittee and other key members of Congress in an effort to persuade them that the staffs are wrong and the court decision should be left in effect," the *Journal* said.

The tax staffs maintain the court didn't study Congressional history or it wouldn't have

handed down the decision it did. They claim the ruling opens the way for huge tax "windfalls" for a small number of firms and that the Treasury might lose as much as \$500 million in revenue. They further argue that the decision would be hard to apply.

"In reply," the *Journal* reported, "the business groups are telling Congress the Government had its day in court and should not now come running to Congress just because it lost."

"They note the Treasury did not get a single vote from the Court of Claims—that three of the five justices hearing the case held that any warranty expenses should entitle the taxpayer to a refund, while the two remaining justices went even further, holding that the entire value of the warranty should be deducted from the tax base right at the time of sale."

"The Treasury made all the arguments it is now making to the Supreme Court, and the High Court refused to review the Court of Claims decision," the businessmen also assert.

Philco Announces '56 List Prices

PHILADELPHIA — Philco Corp. has announced suggested list prices of its 1956 electric appliances and room air conditioners as follows:

REFRIGERATORS

Model	Suggested List Price
L-1668—15.8 cu. ft. master comb.	\$599.95
L-1468—13.7 cu. ft. two-door	549.95
L-1268—12.2 cu. ft. two-door	529.95
L-1260—12.2 cu. ft. two-door	499.95
L-1264—12.6 cu. ft.	499.95
L-1168—10.3 cu. ft. two-door	449.95
L-1166—10.2 cu. ft. two-door	399.95
L-1164—10.5 cu. ft.	329.95
L-1169—10.5 cu. ft. two-way door	499.95
L-1064—9 cu. ft.	269.95
L-1162—11 cu. ft.	269.95
L-864—7.3 cu. ft.	229.95
L-862—8.2 cu. ft.	None

ROOM AIR CONDITIONERS

284-M— $\frac{1}{2}$ hp. Windowlette	369.95
2102-R—1 hp. Windowlette	399.95
202-R—2 hp.	449.95
200-R—	669.95
108-R—1 hp. with heating, cooling control	399.95
86-R— $\frac{1}{2}$ hp. with heat pump	379.95
85-R— $\frac{1}{2}$ hp. with Comfortimer	369.95
106-R—1 hp. with Comfortimer	389.95
84-R— $\frac{1}{2}$ hp.	349.95
104-R—1 hp.	369.95
80-R— $\frac{1}{2}$ hp. with V-Gable grilles	279.95
80-RT— $\frac{1}{2}$ hp. with auto. thermostat	269.95
100-R—1 hp. with V-Gable grilles	269.95
100-RT—1 hp. with auto. thermostat	319.95
60-R— $\frac{1}{2}$ hp., 7 $\frac{1}{2}$ amp.	None
82-R— $\frac{1}{2}$ hp., 7 $\frac{1}{2}$ amp.	319.95

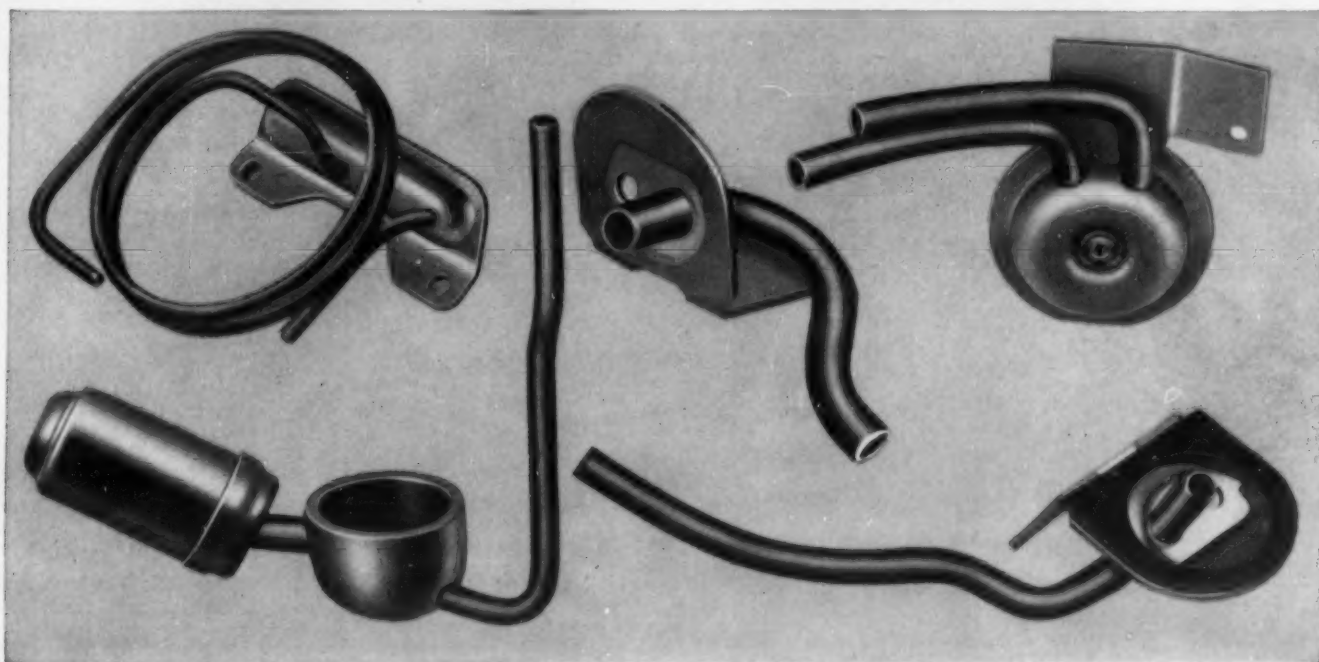
*Same features as 202-R, but alternate design for remote installation; "do-it-yourself" central air conditioning kit.

FREEZERS

V-2065—20.4 cu. ft. upright	599.95
V-1465—14.6 cu. ft. upright	499.95
V-1455—14 cu. ft. upright	469.95
V-1945—18 cu. ft. upright	599.95
H-1855—18 cu. ft. convert. chest	549.95
H-1855—18.5 cu. ft. chest	499.95
1852—18 cu. ft. chest	399.95
H-1355—13 cu. ft. convert. chest	499.95
H-1355—13 cu. ft. chest	399.95
1352—13 cu. ft. chest	299.95
H-852—8.4 cu. ft. chest	199.95

Philco also announced a price of \$349.95 each for the 8.2-cu. ft. refrigerator and 6.8-cu. ft. freezer in its Custom Sectional appliance line. Chrome finish door for these units is \$40 additional.

A base cabinet for use under Custom Sectional refrigerators or freezers is priced at \$60; a single counter top for use over the units, \$40; and a double-size counter top for use over a pair of Custom Sectional refrigerators or freezers, or combination of two, \$70.



Here is a small sampling of the variety of tubing parts produced for Bundy refrigeration customers. Many of them involved close cooperation between Bundy engineers and the customers, in solving problems of design and function. Are your tubing designs simple or complex? Do they call for serpentine coils, swaging, flattening, expanding, brazing, saddle

jointing, bending to small radii, piercing, upsetting, slotting, threading, angle cutting, notching, flanging, flaring, reducing, tapering, other fabrication operations, or combinations of the above? Come to Bundy for the refrigeration industry's most reliable tubing, most helpful engineering talents, and most versatile fabrication facilities.

It almost goes without saying that you can't beat Bundyweld for leak-proof, dependable performance in your compressor and evaporator coils and refrigerant lines, and in other tubing lines throughout your refrigerators and freezers.

But you get more than peace of mind with Bundyweld. For instance, you tap a wealth of fabrication facilities and engineering skills.

Do your tubing part designs call for difficult fabrication operations or easy ones? Do the designs call for unusual combinations of operations? Do they create problems

that may seem unsolvable?

If your needs call for a tubing part that is at all produceable, you can count on us to do the job—exactly to specifications at lowest possible cost. But say it isn't produceable. What then?

Just this. Bundy engineers, who know their Bundyweld and refrigeration tubing problems inside and out, will work with you personally, until problems turn into solutions.

This help and teamwork pay off in time and trouble saved. And such a pooling of specialized skills—yours and the Bundy man's—frequently pays off in lowered ma-

terial costs and lowered production costs, too.

What if your company is geared for low-cost fabrication? Wonderful. You can count on us to ship clean, carefully inspected Bundyweld on time and in specified straight lengths. Of course, you can still summon all the engineering help you can use.

For tubing that's the standard of dependability, for fabrication facilities and engineering talents devoted to producing better tubing parts at lowest possible cost, come to Bundy, headquarters for small-diameter tubing.

BUNDY TUBING COMPANY • DETROIT 14, MICHIGAN

BUNDYWELD TUBING®

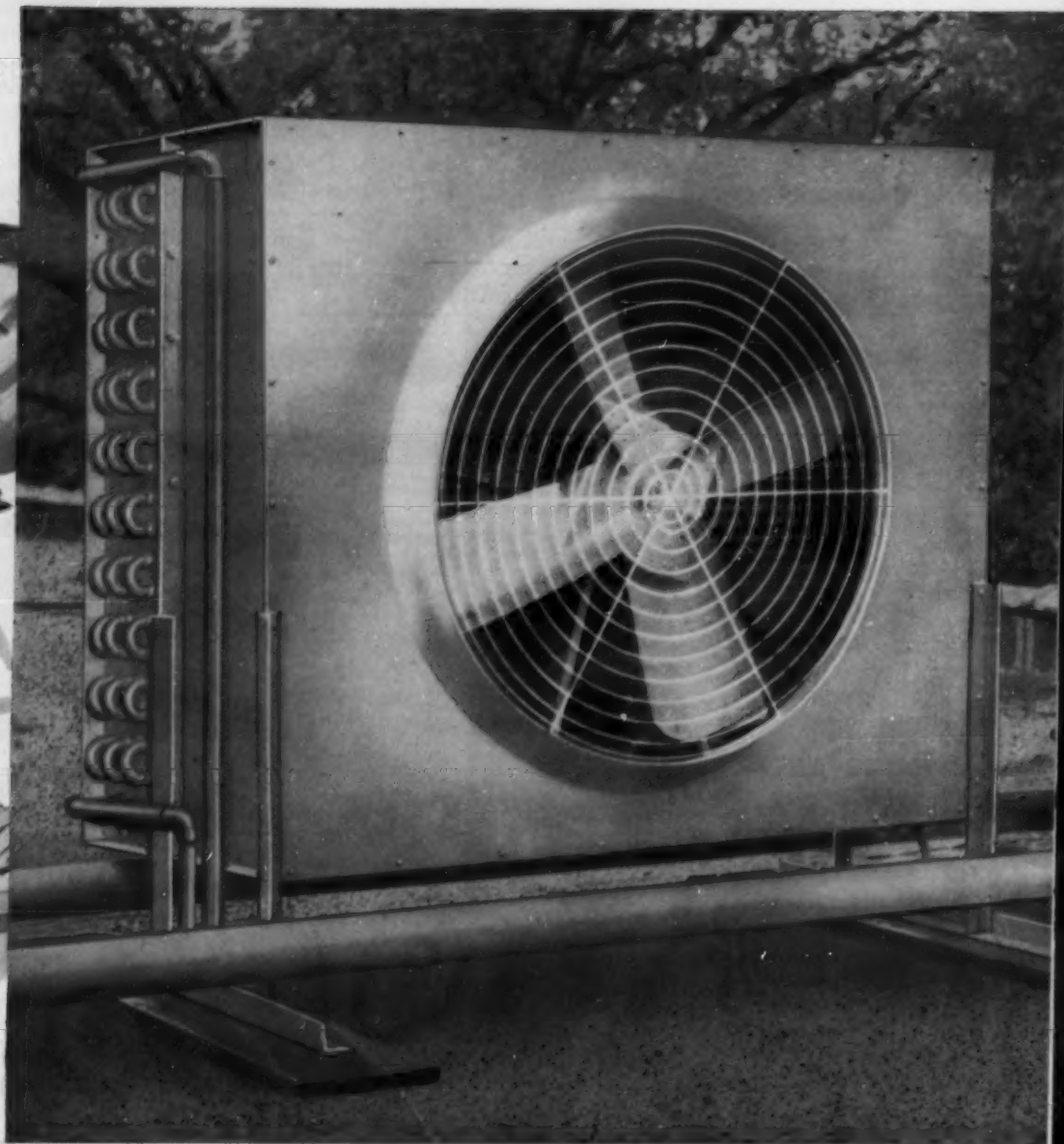
DOUBLE-WALLED FROM A SINGLE STRIP

Bundy Tubing Distributors and Representatives: Cambridge 42, Mass.: Austin-Hastings Co., Inc., 226 Binney St. • Chattanooga 2, Tenn.: Pelson-Deakins Co., 823-824 Chattanooga Bank Bldg. • Chicago 22, Ill.: Lapham-Hickey Co., 3333 W. 47th Place • Elizabeth, New Jersey: A. B. Murray Co., Inc., Post Office Box 476 • Los Angeles 58, Calif.: Tubcoals, 5400 Alcoa Ave. • Philadelphia 3, Penn.: Rutan & Co., 1717 Sanson St. • San Francisco 10, Calif.: Pacific Metals Co., Ltd., 3100 19th St. • Seattle 4, Wash.: Eagle Metals Co., 4735 First Ave., South • Toronto 5, Ontario, Canada: Alloy Metal Sales, Ltd., 181 Fleet St., E. • Bundyweld nickel and Monel tubing are sold by distributors of nickel and nickel alloys in principal cities.

For more information about products advertised on this page use Information Center, page 28.

So Halstead & Mitchell Engineers said:

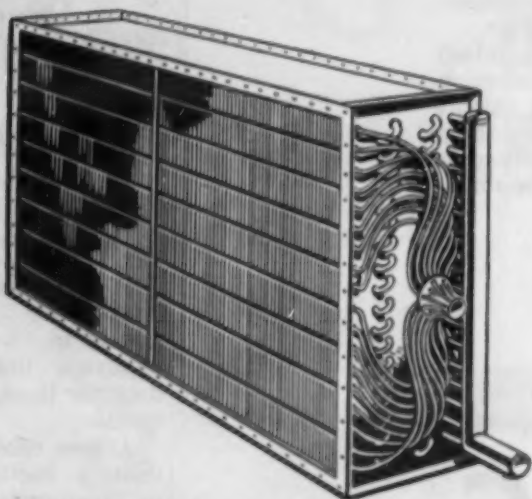
'LET'S GIVE THIS INDUSTRY A BETTER



Halstead & Mitchell **Better FINNED COIL PRODUCTS**



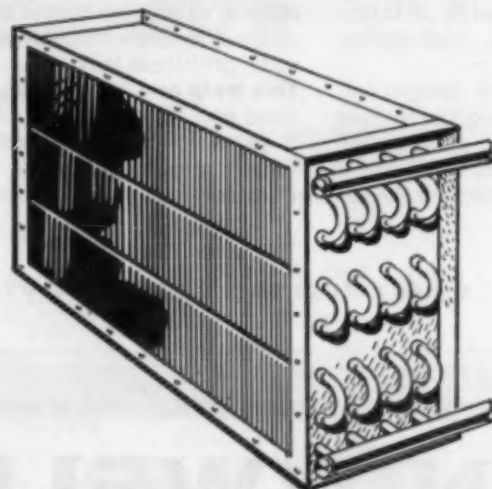
BLAST HEATING & COOLING COILS



Standard sizes of H & M blast coils are available from 2 through 10 tons, and other sizes can be manufactured to your specifications. Write for bulletin describing DE (refrigerant) coils. We can also meet your requirements for water coils (cooling or heating), and steam coils.

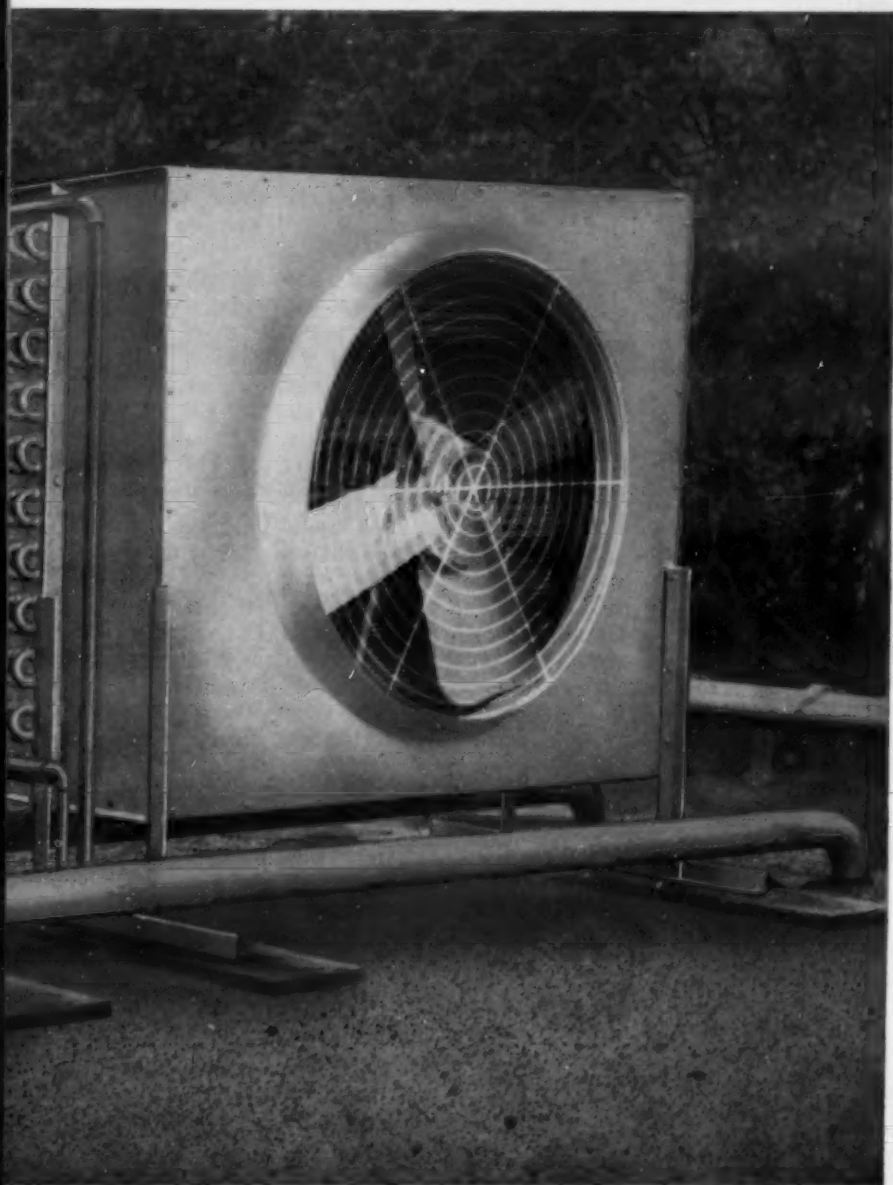


SPECIAL FINNED SURFACE EVAPORATORS & CONDENSERS FOR AIR CONDITIONING



Halstead's exclusive "dimpled" fin design greatly increases air turbulence, and thus adds approximately 15% to heat transfer capacity. Tube patterns available include $\frac{3}{8}$ -in. O.D. tubes on $1\frac{1}{2}$ -in. centers (6, 7, and 8 fins per inch), and $\frac{1}{2}$ -in. tubes on $1\frac{1}{4}$ -in. centers (6, 7, 8, 9, and 10).

AIR-COOLED CONDENSER



NOW WE PROUDLY CALL TO YOUR ATTENTION

the Halstead & Mitchell Air-Cooled Condenser for waterless air conditioning and refrigeration. This is today's better remote Air-Cooled Condenser.

It is engineered to a new principle called "Coordinated Design." This is engineering pioneering which has coordinated capacity, performance, structural design and appearance to give:

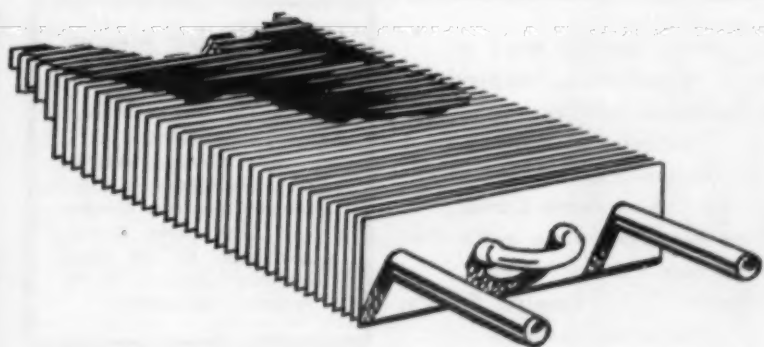
1. **EXTRA-SAFE CAPACITY RATINGS** — made possible by a unique "dimpled" fin giving 15% added heat transfer, as well as a core designed for higher air volumes at lower fan speed. Draw-through air travel gives uniform air distribution across coil.
2. **EXTRA YEARS OF WORKING LIFE** — insured by exclusive, proven Halstead & Mitchell protection against corrosion; lifetime ball bearings; and a tubing assembly pattern which is self-reinforcing and thus deadens vibration before it starts. Casings are fabricated of heavy gauge sheet steel.
3. **EXTRA-QUIET OPERATION** — which is the direct result of the latest design of deep-pitch fan blades driven at slow speeds.
4. **EXTRA-EASY MULTI-CIRCUITING** — developed for Halstead & Mitchell by engineers who know what simpler manifolding and selection of circuits can mean when several refrigeration machines must work off a single coil. Units can be either floor or ceiling mounted for further added convenience.

Even more important, you know these Air-Cooled Condensers bring you—with their Halstead & Mitchell nameplate—an assurance of the highest quality in the air conditioning and refrigeration industry.

The finned coil which makes Halstead & Mitchell Air-Cooled Condensers better is available to you for a variety of applications. Manufacturers will be particularly interested in our quantity prices for original equipment. Why not let us quote on your requirements?



SPECIAL FINNED COILS FOR REFRIGERATION FIXTURES



Halstead & Mitchell's tremendous production facilities work to advantage for those in need of quick delivery, even if orders are for short runs. With our own copper tube producing mill, we can meet any requirements for display-case coils, regardless of quantity.



WRITE FOR BULLETIN AC-100

Halstead & Mitchell

BESSEMER BUILDING, PITTSBURGH 22, PA.

MANUFACTURERS OF THE INDUSTRY'S WIDEST SELECTION OF COOLING TOWERS
WORLD'S LARGEST MANUFACTURER OF WATER-COOLED CLEANABLE CONDENSERS

GET FULL DETAILS ON HALSTEAD & MITCHELL AIR-COOLED CONDENSERS

Horace I. Schmidt, General Sales Manager
HALSTEAD & MITCHELL, Bessemer Building, Pittsburgh 22, Pa.

YES I'm interested in learning the full Halstead & Mitchell story.
I'm especially interested in information concerning:

- ☐ Air-Cooled Condensers
☐ Finned Coil, especially _____

I am a Manufacturer ☐ Wholesaler ☐ Jobber ☐

FIRM NAME	YOUR NAME	POSITION
ADDRESS	CITY & ZONE	STATE

BUSINESS NEWS PUBLISHING CO., DETROIT

**suggest
time payments**

to close the sale

A black and white photograph showing a close-up of a right hand holding a fountain pen. The hand is positioned in a tripod grip, with the thumb, index, and middle fingers supporting the pen. The pen is dark-colored with a silver-colored clip and a visible nib at the tip. The background is a plain, light-colored surface.



LA CROSSE
DRY STORAGE BOTTLE COOLER

IT'S NEW
IN EVERY SIZE..
FOR EVERY USE

LA CROSSE COOLER COMPANY
3800 LOSEY BOULEVARD SOUTH, LA CROSSE, WISCONSIN

WALK-IN COOLERS BEVERAGE COOLERS DIRECT DRAWS CUBE MAKERS DRAINBOARDS

Sales Manager Tips--

(Concluded from preceding page) ing; continuation of basic training; coaching of special techniques needed to carry out a specific assignment.

"Management's responsibility for training and re-training doesn't stop at the initial break-them-in stage, but rather throughout the man's employment. . . . A good coach not only tells his men what to do but how to do it. . . .

"Continually inspect and properly correct: The function of a supervisor is to close the gaps between desired performance and actual performance.

"Many a manager sets up his objectives, builds a good program, sells it well, instructs his men, then fails because he took proper execution of his objectives for granted.

"A manager must be skeptic and assume men will misunderstand instructions, become careless.

"As he inspects, he must correct. . . .

"Establish incentives: A sales manager must know how to make the best use of those age-old incentives which spur men to more and better efforts.

"Pascal, writing of managing men several hundred years ago, said, 'You must know where the springs are.' Managers know that money is one of the springs.

"Recognition, place, position, praise are other springs actuating those emotions which spur men to deeper thought and greater effort. . . .

"Keep the score and post promptly: . . . A salesman likes to know where he stands; the wise sales manager issues progress reports as frequently as possible. . . .

"Recognize superiority: There is no reward for being a superior salesman, unless this is recognized, even though a salesman is rewarded with extra money. That alone is not enough.

"The man's nature is hungry for and responds to recognition and praise. Every experienced manager knows of this yearning of men to have their better than average performance recognized.

"Make an important sale an event. Inform his wife, tell others about it.

Always urge him to go after another one while the iron is hot!

"Set the example: Veteran managers have learned from costly experience that the attitude of a man-power manager toward his superiors will largely determine that of his men toward him. . . .

"If the manager follows instructions and shows respect for authority, he may take this attitude for granted in his men. If he grumbles in front of his men about orders he receives from his superiors, his men are likely to grumble over orders received from him.

"If he arrives early, his men are likely to do so. If he puts in full hours, works hard, and plays the game, his men will follow.

"Keep yourself the boss: . . . A successful manager knows how to be a boss and stay the

boss. He is friendly, human, understanding, but not too familiar. Familiarity breeds contempt. . . .

"Encourage and assist: . . . A good manager gives the man in the dumps a cheery word or an assignment that he knows will turn out well which will restore confidence. When each man's personal crisis is over, the wise manager demands full effort again.

"He may even suggest a little extra push to make up for lost time. If he's the right kind of manager he usually gets that extra effort. . . .

"Be a Solomon to your men: A sales manager must face extraordinary demands for wisdom, fairness, and human understanding. . . . Men will, in most cases, follow a just man gladly."

Cawthon continued: "We in our company have found the program that is beginning to have what we feel is a desired effect in creating a team spirit and a competitive feeling among our salesmen.

"We have adopted the program as set forth by National Sales Executives of awarding the Distinguished Sales Award, which is a trophy, a replica of a salesman, to the salesman who turns in the best performance for the year. He is awarded a certificate of accomplishment and is also furnished with a lapel pin.

"All of this takes place at a public ceremony, sponsored by the Miami Club of the National Sales Executives, at which his fellow salesmen are present, his wife, and his friends. This occasion has proper coverage by the local press. We make it a very important achievement, duly recognized."

Sherer Announces Contest Winners

MARSHALL, Mich.—C. R. Rogers of San Mateo, Calif., walked off with top honors in the 1955 Quotam Pole Contest conducted among its zone sales managers by Sherer-Gillett Co.

The company has conducted the contest annually for the past five years, with cash prizes being paid for exceeding quota during each of the four quarters as well as for the year as a whole.

In addition to the cash awards, Rogers was also given custody for the coming year of the totem pole, emblematic of the top man's position on the pole.

E. W. Orrall, Braintree, Mass., and John C. Glover, Montrose, Ala., were second and third men on the pole, respectively.

Air Force Holds Seminar On Refrigeration In Far East Area

TOKYO, Japan—A four-day refrigeration equipment maintenance seminar for Far East Air Forces personnel was held recently at Ashiya Air Base in southern Japan.

About 55 engineers from air bases throughout the Far East attended. Army and Navy representatives also were invited.

Purpose of the seminar was to exchange information on refrigeration maintenance practices at FEAF bases, according to George E. Beard, refrigeration engineer for FEAF Headquarters.

Representatives from four commercial companies—York, Minneapolis-Honeywell, Mitsubishi, and Carrier—gave talks on their firms' equipment.

for '56 FREEZ-KING ANNOUNCES

the greatest
development in modern
continuous freezers!

the new FREEZ-KING—easiest to operate and most sanitary twin freezer in the world. Two complete freezers in one stand—each unit operates independently—every portion perfect—exclusive new FREEZ-KING automatic feed.





**MODEL 975
SELF CONTAINED**

Spigot type draw-off produces neat, uniform products. All stainless steel. Large output capacity.

**MODEL 160
SHAKE DISPENSER**
serves
**200 SHAKES
AN HOUR**

- Easy! As simple as serving a soft drink.
- Produces shakes and malts at low cost—high speed—big profits.
- Sanitary! Direct from dispenser to customer. No handling. No contamination.

MODEL 150
serves
**SOFT ICE CREAM
or FROZEN
CUSTARD**

- Uses less power—costs less to operate.
- Requires only four square feet of floor space.
- Easy to clean! Takes only 5 to 10 minutes instead of the usual ¼ to 1½ hours.

2 LOW PRICED MODELS FOR

Lunchrooms	Burger Stands	Amusement Centers
Drive-ins	Drug Stores	Military Canteens
Supermarkets	Bus Stations	Grocery Stores
Theaters	Skating Rinks	Industrial Cafeterias

... and many others

EXCLUSIVE TERRITORIES AVAILABLE FOR MASTER DISTRIBUTORS & DEALERS

WRITE FOR DETAILS

THE FREEZ-KING CORPORATION
2518 WEST MONTROSE AVE., DEPT. 50, CHICAGO 18, ILL.

TWO ARE BETTER
THAN ONE

2
COMPRESSORS
INSURE
BETTER
PERFORMANCE

**ORDER YOUR FLOOR
SAMPLES TODAY!**

What Happened In Residential Air Conditioning In '55:

If there was any thought that the 189 residential air conditioning installations reported for Minneapolis in a NEWS survey for 1954 was a "flash-in-the-pan" development, results of the 1955 NEWS survey definitely prove otherwise.

Sixteen Minneapolis contractors installed 511 central cooling systems in Minneapolis during 1955, the NEWS has determined.

This gain of 270% came largely from the existing home market, although awakened interest of the speculative home builder also helped somewhat.

This year most Minneapolis contractors expect, and plan, to do even better.

By C. Dale Mericle

MINNEAPOLIS—Residential air conditioning installations zoomed here in 1955, running 270% greater than in 1954.

A survey of contractors in the Minneapolis area reveals that 511 residential systems were installed during 1955, compared to 189 during 1954.

This survey was made by AIR CONDITIONING & REFRIGERATION NEWS, and is similar to one conducted last year and reported in the Jan. 10, 1955 NEWS. Results are tabulated in the accompanying table, which also shows where the systems were installed, type of systems puts in, etc.

Sixteen contractors are represented in the latest Minneapolis survey, two less than the previous year. The contractors not listed for 1955 had a combined total of 29 installations in 1954. This accounts for the difference between 160 jobs shown as the 1954 total in the accompanying table and the 189 actually installed in that year.

Big Gain Was In Existing Homes

Big gain in residential air conditioning sales in 1955 was made in the existing home market, the survey indicates. There were 372 jobs put into existing homes last year, compared with 61 during 1954.

Of the remaining 1955 installations, 96 were installed in new homes at the choice of the owner, while 43 were put in at the choice of the builder.

Although small in number, the 43 "builder" installations are significant because there were no builder installations at all during 1954, the previous survey showed.

Surprisingly enough, the 96 jobs in new homes at the choice of the owner fall somewhat short of the 128 similarly listed for 1954.

Installations in new homes were made by 11 of the 16 Minneapolis contractors. All but three of the 16 put jobs in existing homes, the survey shows.

139 Year-Round Jobs Compare with 372 Add-On Units

The proportion of year-round systems to "add-on" or cooling only installations is identical with the ratio of new to existing home installations. There were 139 year-round jobs installed, all in new homes, compared with 372 "add-on" or cooling only installations.

(The term "add-on" is used here to include self-contained cooling systems added to existing heating systems as well as those cooling units which depend

on existing furnace blower for air circulation.)

No attempt was made in last year's survey of Minneapolis installations to differentiate between the two types of systems. Thus, no comparison is possible on this score between the 1954 and 1955 figures.

Data on Condensers

Definite trend to air-cooled condensers, however, is noted in the 1955 survey. There were 142 air-cooled jobs installed during 1955 and 369 water-cooled systems.

This represents a big jump, numerically, over the 23 air-cooled systems installed during 1954. Of the 189 jobs in 1954, 166 were water cooled.

Percentagewise, the gain in air-cooled systems was not so great. In 1954 air-cooled units represented 12% of the total; in 1955, 28% of the total.

Blessed with numerous lakes in and around the city plus the Mississippi river, Minneapolis has not found water supply a great problem for air conditioning until very recently.

Restrictions on water use and disposal now going into effect,

however, will probably result in a big increase in air-cooled condensers and cooling towers perhaps beginning this year, contractors believe.

Only 10 cooling towers were reported for the 369 water-cooled jobs installed in Minneapolis homes during 1955, the survey shows.

Of the makes of cooling systems installed in Minneapolis residences during 1955, nine of the 13 makes represented were the products of old-line air conditioning and refrigeration manufacturers while four were the products of furnace companies.

9 Makes Garnered 61% of Total

The nine air conditioning makes garnered 314 jobs or 61% of the total, while the four

furnace manufacturers were represented with 197 jobs, or 39% of the total.

In the 1954 survey 14 makes were found in the 189 jobs, and of these seven were air conditioning manufacturers and seven furnace manufacturers.

Most of the contractors listed in the 1955 survey are primarily heating firms, all but two operating their own sheet metal shop. This should not be surprising, considering how important residential heating is in the Minnesota climate.

Rundown of 16 Contractors

A rundown of the 16 contractors active in residential air conditioning in Minneapolis during 1955 shows the following: Contractor A (180 units) is a
(Concluded on next page)

these 7 Keys open every door to



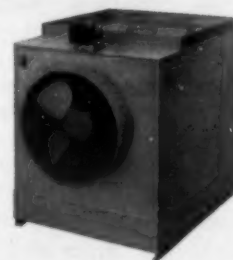
Water cooling has no "closed doors" this year. No matter what the problem, one of these 7 Marley cooling towers is the key. Special problems, such as tower location, fire codes, unusual corrosive conditions — all can easily be met and mastered with one of these '56 Marley cooling towers.

Marley towers cover the water cooling front — meet every service condition and capacity requirement. They're available when and where you need them, for stocks are maintained in all sizable cities. Call your reliable Marley distributor for information on the world's most complete line of water cooling towers for air conditioning and refrigeration.

Marclad Finish is standard on all '56 steel Aquatowers. This high-temperature, thermo-setting plastic defies the corrosive effects of acids, alkalis, water — insures a longer and happier service life than any other packaged cooling tower!

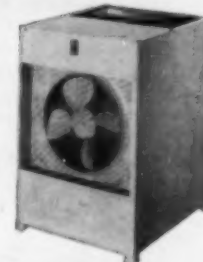
AQUATOWERS® (large capacity)

Models 4220 through 4250 provide the full performance water cooling ability and long service life essential to commercial refrigeration and air conditioning application. Fabricated of heavy gauge steel, ruggedness and durability are apparent in the construction of these towers. Their design incorporates a new ease of assembly and disassembly whenever required. These features plus operating and maintenance simplicity make them the first choice of discriminating buyers.



AQUATOWERS® (medium capacity)

Models 4105 through 4115 run the gamut of intermediate capacity applications. These completely welded, heavy gauge steel units come fully assembled for easy field application. Highlight features include Marclad® finish, readily removable open distribution basin, quiet, deep-pitched fan, Marley lifetime nailless filling. Like other Aquatowers, they can be located indoors or out.



AQUATOWERS® (small capacity)

Models 4102 and 4103 are designed for 2 to 4 tons of refrigeration or air conditioning. Installation, operation and maintenance are extremely simple, yet these small models incorporate the high-performance design features of larger Aquatowers. Marclad® finish lends that adaptability and compatibility that is so appealing to owners.



511 Minneapolis Home Installations In '55 Zoom 270% Higher than '54

(Concluded from preceding page) makes, one being a furnace heating and sheet metal firm representing three lines. Two of these are old-line refrigeration and air conditioning manufacturers, the third a furnace manufacturer.

Contractor B (150 units) is a heating and sheet metal firm which represents a furnace company but also installs units of an air conditioning manufacturer.

Contractor C (100 units) represents an old-line manufacturer of air conditioning and refrigeration equipment.

Contractor D (20 units) is a heating contractor representing an old-line air conditioning manufacturer.

Contractor E (12 units) is a heating and sheet metal firm who installed three different

Contractor F (10 units) is a refrigeration and air conditioning contractor who installed units of an air conditioning manufacturer.

Contractor G (six units) is a heating and air conditioning firm which installed two makes, both air conditioning manufacturers.

Contractor H (six units) is a heating contractor. Installed units of old-line air conditioning producer.

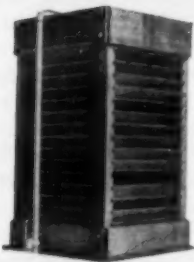
Contractor I (six units) is a heating firm installing units of old-line air conditioning manufacturer.

Contractor J (five units) is a heating contractor installing

Residential Air Conditioning In Minneapolis In 1955

	1954	1955			Exist-	Year-	"Add-			With	Sheet
	Total	Total	-New	Homes-	ing	Round	on"	Air	Water	Cooling	Metal
Contractor	Units	Units	Owner	Builder	Homes	Systems	Units	Cooled	Cooled	Tower	Shop
A	45	180	34	2	144	36	144	126	54	10	Yes
B	25	150	25	5	120	20	130	....	150	....	Yes
C	40	100	10	30	60	50	50	5	95	....	Yes
D	8	20	....	4	16	4	16	....	20	....	Yes
E	15	12	6	....	6	6	6	3	9	....	Yes
F	1	10	3	....	7	3	7	2	8	....	No
G	6	6	1	....	5	....	6	2	4	....	Yes
H	2	6	4	....	2	4	2	....	6	....	Yes
I	....	6	5	1	....	6	....	....	6	....	Yes
J	6	5	....	....	5	....	5	....	5	....	Yes
K	2	5	4	....	1	3	2	....	5	....	Yes
L	1	4	4	....	....	4	....	1	3	....	Yes
M	4	3	....	....	3	2	1	....	3	....	No
N	1	2	....	....	2	....	2	2	....	....	Yes
O	3	1	....	....	1	....	1	1	....	....	Yes
P	1	1	....	1	....	1	....	....	1	....	Yes
Total	160	511	96	43	372	139	372	142	369	10	

Successful Water Cooling



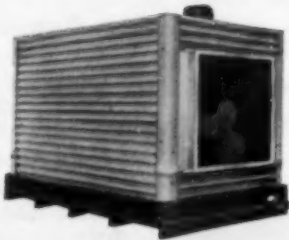
SPRATOWERS® (Natural Draft)

There is nothing like a Marley Spratower for water cooling installations where minimum initial investment and lowest operating costs are essential. '56 Marley Spratowers incorporate a new super-spray system that achieves maximum water break-up and air-water contact. They are fabricated of select heart quality California redwood and shipped disassembled. Available in 11 air conditioning and refrigeration sizes.



WOOD AQUATOWERS® (small)

Structural durability is outstanding in these all-wood towers produced in 5 models for service requirements of 3 through 15 tons. Ships factory-assembled for easy installation. Designed specifically for localities with high corrosion incidence, the forced draft design permits location of mechanical equipment out of the hot, humid air stream.



WOOD AQUATOWERS® (large)

These all-redwood towers with heavy asbestos cement board casing are designed for longest service life under most corrosive operating conditions. Applicable to all services from 20 to 50 tons, they make use of forced-draft and cross-flow principles. Air discharge is vertical, making this tower applicable to many restricted locations. Ships disassembled; easily hoisted and erected.



AQUACOOLERS®

This induced draft-counterflow tower was designed primarily for indoor installation, but is equally adaptable to outdoor service. Available in 5 sizes with capacities from 3 to 15 tons, the Aquacooler uses both pressure spray and MarPak® nailless filling to achieve maximum water break-up, longer air-water contact, higher performance.

"Nothing cools as well as water. . . nothing cools water as well as a Marley cooling tower"

The Marley Company

Kansas City, Missouri



units of furnace manufacturer.

Contractor K (five units) is a heating and sheet metal firm. Installed three different makes, two being air conditioning manufacturers, one a furnace company.

Contractor L (four units) is a heating and sheet metal contractor. Installed units of two refrigeration manufacturers.

Contractor M (three units) is an air conditioning, heating, and appliance outlet which installed units of two old-line air conditioning and refrigeration firms.

Contractor N (two units) is a heating and sheet metal firm. Installed units of air conditioning manufacturer.

Contractor O (one unit) specializes in industrial air conditioning and heating. Installed unit of old-line air conditioning manufacturer.

Contractor P (one unit) is a heating contractor. Installed unit of old-line air conditioning manufacturer.

C. A. Dunham Names Jepson Ad Manager

CHICAGO — Edward G. Jepson has been named advertising manager of C. A. Dunham Co. here, manufacturer of heating and cooling equipment, according to W. S. Browning, vice president.

He succeeds J. W. O'Neil who has taken a position in Louisville.

Jepson is a graduate of Northwestern university where he received a B.S. degree in commerce and he attended Warton School of Finance, Philadelphia.

He was formerly assistant merchandising director of *Specialty Salesmen* magazine, Chicago, and has been in the Advertising and sales promotion Section of E. I. du Pont de Nemours & Co., Inc.

AIRO stands for

Fast, dependable,
world-wide service.
Refrigeration and
Air Conditioning parts
and supplies.
Write for current Catalog

AIRO SUPPLY CO.
2732 N. Ashland Ave., Chicago 14, Ill.

AEC Orders 37 Self-Contained Air Dehumidifiers for Overseas Facility

LOS ANGELES—Officials of Kilpatrick & Co., Los Angeles, contractor and engineer, report recent delivery to Holmes & Narver, Inc., international engineer-constructor of partial shipment of a 37-unit order for special dehumidifying equipment, destined for an overseas facility of the Atomic Energy Commission.

Units are manufactured at Los Angeles factory of Drayer-Hanson, Inc., with the order secured through the company's local representative, Air Conditioning Supply Co., Los Angeles.

The special self-contained air conditioners will use "Freon-12" as refrigerant, are fabricated of non-corrosive materials, will be delivered to the final job site completely assembled, piped, and wired. Power wiring in the

field is only connection required.

Dehumidifying units are engineered, the factory reported, to maintain temperature and humidity conditions of 80° dry bulb, and 45% relative humidity within the conditioned space served when outside conditions are 85° dry and 80.6° wet bulb.

"Refrigeration capacity of the units is not less than 42,000 B.t.u. per hour at a refrigeration evaporating temperature of 41.5° F.," it was stated.

Church Bldg. Air Conditioned

ETOWAH, Tenn.—The First Baptist church has begun construction of the second unit of its new educational plant at a cost of approximately \$100,000.

The two-story building will be completely air conditioned.

Ft. Worth Group Moves To Ease Air Conditioning Mechanics' Shortage

FORT WORTH, Texas—Formation of an educational committee to cooperate with local technical schools in hopes of alleviating the current shortage of air conditioning and refrigeration mechanics has been announced by H. E. "Buck" Cunningham, newly-elected president of the Fort Worth Air Conditioning Association.

Cunningham, who is associated with Lydick-Barmann Co. here, says the association will continue its policy of keeping the public informed on latest developments in the air conditioning field.

Other new officers of the association include Howard E. Decker, first vice president; Grant H. Johnson, Jr., second



ITS largest single air conditioning order in number of units and tonnage is shown rolling off assembly line at Refrigeration Engineering, Inc., Los Angeles. Destined for Tropicana hotel, Las Vegas, Nev., are 47 floor and ceiling units totaling 600 tons.

vice president; Max B. Mobley, secretary-treasurer.

Directors elected were W. R. Porterfield, Curtis L. Love, and I. M. Golan.

Col. Edwin D. McCoy continues as executive secretary of the group.

Merger Combines Grille Production In Titus Mfg. Corp.

WATERLOO, Iowa — Titus Mfg. Corp. and Titus, Inc. have merged as of Dec. 30, 1955.

The move was announced in a joint statement issued by D. L. Titus, president of Titus Mfg. Corp., and R. W. Titus, president of Titus, Inc.

According to the statement, stockholders and directors of each company voted to approve the merger, which will combine the commercial grille production of Titus Mfg. and the residential grille production of Titus, Inc.

The new firm will bear the name of Titus Mfg. Corp. General offices and manufacturing facilities are in a new 94,000-sq. ft. factory, located on a 30-acre tract in Waterloo.

The firm will manufacture a complete line of grilles, registers, and diffusers for all types of residential and commercial air conditioning applications.

It was also announced that a new modern laboratory and testing facilities have been completed and will accelerate research and development of new products in air distribution.

Operations of the new company will be directed by D. L. Titus, president; R. W. Titus, vice president; and J. S. Smith, vice president in charge of sales.

O. A. Sutton Appoints Fernandez Market Research Director

WICHITA, Kan. — Appointment of Benjamin J. Fernandez as director of marketing research for The O. A. Sutton Corp., has been announced by Dale W. Gordon, executive vice president.



Fernandez

A broad range of research activities, designed to determine and anticipate consumer preferences in all types of cooling appliances, will be conducted by this department.

Fernandez received his AB degree from the University of Redlands at Redlands, Calif.; holds a master in Business Administration with a major in Marketing from the Graduate School of Business Administration of New York university. He was formerly associated with General Electric as market analyst.

For air clean and fresh as Springtime



... a better air filter for today's improved air-conditioning units

Here it is... American Air's attractive, new **GREEN** AMER-glas filter, a true air-conditioning filter! It passes every rigid test for minimum air resistance and maximum dirt-catching power with flying colors!

MANUFACTURERS have gone to much trouble and expense to improve their air-conditioning units. Now AAF has called upon its many years of research and know-how to provide an improved, attractive filter developed especially

for today's air conditioners. Leading manufacturers have long depended upon AAF to help solve their problems. DISTRIBUTORS AND DEALERS are already stocking this new **GREEN** filter as a standard replaceable AMER-glas product in a complete range of sizes.

A FILTER FOR EVERY NEED. Whatever your requirements, American Air has AMER-glas filters in every size and shape ready for immediate delivery. Call us without obligation.

WRITE TODAY FOR FREE AMER-glas FILTER



American Air Filter
COMPANY, INC.

Louisville 8, Kentucky



American Air Filter Co., Inc.
109 Central Ave., Louisville 8, Ky.

Please send us sample and complete information on new **GREEN** filter.
We are ☐ Manufacturer ☐ Distributor.

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COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Built-In Boom Gives Rise to New Design, Manufacturing, Distribution Concepts

ATLANTIC CITY, N. J.—Current boom in built-in appliances is giving rise to new concepts in appliance design, manufacturing, and distribution patterns as well as kitchen planning, it was brought out at the Domestic Refrigerator Engineering Conference held during the 51st annual meeting of the American Society of Refrigerating Engineers here recently.

"One of the primary facets of built-ins is that they have done away with the design, manufacturing, and marketing concept of single appliances," pointed out Peter Muller-Munk, Pittsburgh product designer.

"To the designer and to the engineer, the problem is no longer one of the specific appliance but now that of the total design of the integrated kitchen in which all appliances are related.

One Appliance In Effect

"The entire kitchen will now, in effect, become one appliance," predicted Muller-Munk.

"The industrial designer will now be dealing with basic functional and architectural elements and will be able to reflect the changes in general living habits in the products he places before the public.

"This will be evidenced," Muller-Munk declared, "by a greater simplicity of contour, a refinement of proportions and detail, and increased attention to new surfaces, textures, and materials.

"It is possible that specialized individual food-storage units will be developed to replace the single storage container of today," he also commented. "New combinations of storage units may evolve to take the place of the freezer-refrigerator combination."

"What started as a custom-built innovation in relatively few higher priced new homes has already achieved a measure of standardization and acceptance for budget priced homes," declared Kenneth Cook, sales manager, key accounts, American Kitchens, division of Avco Mfg. Corp.

"Present homeowners are aware of the trend; kitchen remodeling will include both built-in equipment and a generous use of color or texture," he said.

Obsolescence Drive Aided By Built-Ins, Color

"Manufacturers are out to create obsolescence with a vengeance, and they are using two potent weapons: built-ins and color," Cook explained.

At the installation level most of the built-in business to date has gone to builders and contractors, according to Cook.

"The merchandising attitudes seem to fall into two patterns," he explained. "The best sources indicate that 75% of the builders, particularly the tract builders, classify built-ins as 'a good sales feature now in demand.'"

"The small contractor is convinced not only of the market potential in new homes but especially in remodeling," Cook

added. "They key to these sales is through the retail lumberman. He is already in the vast remodeling market. He has been the small builders' 'bank' for years.

"Since we must have dealers to move these goods, the time is now for every manufacturer and major appliance distributor to take immediate inventory of present merchandising methods to save the 'patient,'" Cook emphasized.

"The trend to built-ins has completely reversed the thinking that complete kitchen merchandising is a 'step-child' in the over-all appliance sales program," he asserted. "The full line has become a must in the

survival of the fittest for supremacy.

"To follow and promote the new built-in type of kitchen merchandising the key work is training to produce skills in 1. kitchen planning, 2. color styling, 3. job estimating, 4. financing, and 5. installation service.

"This new dealer must have a planning service coupled with advice on color styling, and the new successful dealer cannot ignore the remodeling market," Cook cautioned. "Sixty per cent of kitchen equipment went into remodeling last year, and the trend is increasing.

"The ideal situation would be for the appliance dealer to be

the prime contractor and farm out work to carpenters, masons, electrical contractors, plumbers, and other tradesmen," Cook suggested.

He cited one survey which showed that 53% of kitchen-selling dealers subcontract carpentry, 49% plumbing, 34% wiring, and 55% painting.

Advantages of Built-Ins

Although built-ins are more costly than free-standing units, "they give a room greater spaciousness by eliminating clutter and the awkward effect of large free-standing equipment," said Prof. Glenn H. Beyer, who is director of the Housing Research Center at Cornell university.

"The efficiency of the kitchen is increased, and there are fewer surfaces to clean and fewer gaps to collect dust," he declared.

"Built-in refrigerators also suggest a horizontal design

which permits placement at waist level convenient for the woman. It reduces fatigue from stooping.

15-In. Counter Desirable

"A counter 15 in. wide is desirable with or adjacent to the refrigerator unit," he pointed out. "Four double door horizontal wall refrigerators, pull-out boards which may be an integral part of the appliance are satisfactory.

"The location of the refrigerator in the kitchen is crucial since it is commonly used in conjunction with the sink, range, mix areas, and with the dining area," Prof. Beyer advised.

"Except for items such as ice cubes and ice cream, the freezer is generally used for 'inactive' storage. This permits it to be located less conveniently than the refrigerator; for example, below it," he explained.

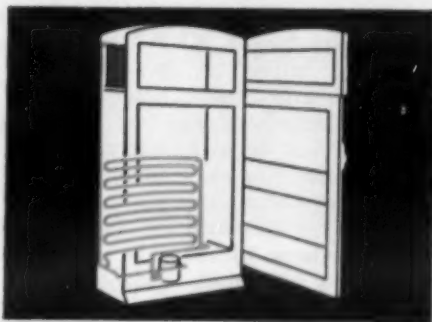
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RODUCTS

Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from Page 1, Col. 1)
setting consequence in a city without its accustomed newspapers. An old lady who regularly phoned the *Detroit Times* household editor to complain that Clark's O.N.T. thread no longer was available, and that egg yolks aren't so yellow as they used to be, didn't know what to do with her afternoons. Horoscope readers were totally at a loss for guidance; some even went to bed for the duration. . . .

Sports fans, stock market devotees, puzzle solvers, readers of advice to the lovelorn were frustrated to the breaking point.

Nearly everybody missed the comic strips. Dick Tracy, Brenda Starr, Li'l Abner, Sheriff

Finn, and Little Orphan Annie were left hanging on cliffs, pursued by villains . . . and regular readers were gasping for the denouement.

Men and women who normally vented pent-up emotions by writing sarcastic letters to "Voice of the Reader" departments beat up their wives, told off their bosses, and insulted neighbors with whom they'd been on excellent terms previously. We aren't kidding about this: Detroit police-call records reveal an alarming upshoot in family fights and neighborhood squabbles during the newspaperless period.

Many of "Dopes" good friends in the editorial departments of the *Detroit News*, *Times*, and *Free Press* were appalled at these reactions. Judging by phone calls, letters, and personal button-holing, their subscribers missed gossip columns, human interest stories, and other "fea-

tures" much more than they did important local, world news.

Whereupon our editor friends went into a mental tailspin also. They themselves were on the verge of a clinical breakdown before the strike was settled. Why had they worked so hard to provide facts and useful information? For what? Is Arthur Godfrey more important than John Foster Dulles? Don't answer that, anybody.

Practical Damage

On the serious side, Detroit mercantilists lost irretrievable sales volume because they lacked newspaper advertising.

Funerals of prominent and beloved people were almost unattended. Births, marriages, promotions went unrecorded, unsung, and unrecognized.

Touring theatrical troupes and sports shows detoured Detroit. (No publicity, no customers). Charity drives fell flat. Movies, television programs, concerts and lectures played to sparse audiences. Even church attendance suffered.

Obviously a NEWSPAPER is a Hinge of Human Action, and a Fulcrum of our lives.

Detroiters will affirm that. Somehow, those of us who've devoted our lives to The Newspaper of This Industry wish that this realism were better appreciated.

Australian Interlude

Two of Australia's best-known and most-beloved refrigeration men passed away recently. Frank Hansen and Eric Ebeling, both of whom were frequent visitors to the United States and had many longtime friends here, long will be mourned by associates on both continents. Each was identified with F. C. Lovelock Pty. Ltd. of Sidney, N.S.W., Australia.

F. G. Minister, a former Kelvinator man, is the new General Manager of the Lovelock firm. F. P. Donohoe is Chairman of the Directors.

Note to Australian subscribers:

Good friend of *Inside Dope* will arrive in your wonderful country in March of this year. His name: Prof. William Sprague Holden. He is the Director of the Department of Journalism, Wayne university. Prof. Holden and his wife, Sheila (who is an extraordinarily good singer, by the way) will be with you for nearly a year. His purpose: to write a book about you.

"Dope" has provided him with names of our subscribers. Please give him a cobbler's welcome!



PRODUCTION methods of Brunner plant are explained by Aubrey W. Detwiler, executive vice president, to West German refrigeration executives Otto Koch, Alfred Fink, Alfons Langecker, Rudolf Hintze, and Karl Eichner with aid of Joseph Raufeisen (right) chief engineer.

West German Refrigeration Company Officials Visit American Factories

UTICA, N. Y.—Five top officials of West German refrigeration firms are now on a six-week tour of the United States studying manufacturing and marketing procedures employed by air conditioning and refrigeration companies in this country.

Privately financed but conducted by the International Cooperation Administration, the tour schedule includes visits to Brunner Mfg. Co. here, Jordon, Carrier, Kelvinator, Ford, Armour, Hotpoint, Minneapolis-Honeywell, Whirlpool-Seeger, Servel, General Electric, Delco Products, Frigidaire, Copeland, Tecumseh, and Frick as well as sessions with labor and other groups.

The visitors are Karl Eichner, works manager, and Otto F. W. Koch, manager of the domestic and commercial refrigeration departments, Surth Machine Works; Alfred Fink, co-partner and manager of Messrs. Eisfink Carl Fink O.H.G.; Rudolf Hintze, manager and technical director of Stempel-Hermetik GmbH., and Alfons Langecker, mechanical engineer, Robert Bosch GmbH.

The group's recent visit to the Brunner plant is perhaps typical of the way the trip is conducted.

Under the guidance of Aubrey W. Detwiler, executive vice president, and Joseph Raufeisen, chief engineer, the German visitors spent an entire morning touring and studying manufacturing operations in the Brunner plant here.

They were accompanied by an interpreter, Henry Lunau, and Edward Gilman, Jr., ICA project

manager. Incidentally, no interpreter was needed for Raufeisen, who is a native of Zurich, Switzerland.

Following the plant tour, the group was taken to a nearby inn famous for its German cooking for lunch with key Brunner executives representing all aspects of management, engineering, production, sales, and service.

Nearly three hours after lunch was devoted to questions and answers, most of which were concerned with design, manufacturing, and material details. More than a dozen Brunner executives participated with Detwiler serving as the moderator.

Speaking for the German group, Otto Koch said he was impressed by the amount of mechanization per man observed in the Brunner factory, which is employed "no doubt because labor costs more in this country."

To top off the visit of the German guests, Brunner staged a reception and dinner that was virtually a civic affair, being attended by the mayor of Utica, officers and directors of the local Chamber of Commerce, presidents of other industrial firms, clergymen, union officials, and other groups.

There were several short speeches, including an official welcome address by Frank C. Hawk, Brunner vice president in charge of sales, and the response of Otto Koch, who pointed out that although "this industry was started in Germany, in the 20's and 30's you surrounded us, and you have now reached top saturation."

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FOR MOTORS . . . MIGHTY MITE

MIGHTY MITE motor protectors give you positive protection against charring of insulation and burn-out. These units are thin, compact, and are not affected by dust or moisture. They are factory-set, can be calibrated at break temperatures to 150° C., and are available for motor ratings to 1/4 H.P., 115/230 v.a.c. MIGHTY MITES can usually be installed in the stator windings without causing redesign of the motor or change in assembly procedure.



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DUAL MITES are an ideal, automatic thermal control for appliances where a fixed, accurate heat regulation is required up to 150° C. They can be installed readily without product modification. DUAL MITES are furnished in ratings to 12 amps, 115/230 v.a.c., and are housed in an insulated case for maximum thermal sensitivity.

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UNARCO DEALER PLUS PLAN

See Next Week's Issue

AIR CONDITIONING & REFRIGERATION NEWS

FEB. 13th

It tells all about

UNARCO \$100,000.00 DEALER PLUS PLAN

Trend Reversal Noted

Industrial Gauge Rooms, Multi-Story Uses Seen To Revert to Remote Air Conditioning

By C. Dale Mericle

UTICA, N. Y.—Trend in recent years to self-contained air conditioners is now changing, believes Frank C. Hawk, vice president in charge of sales for Brunner Mfg. Co. here.

"The pendulum is now starting to swing in the other direction," Hawk told a delegation of five refrigeration company executives from West Germany now touring U. S.

"In the range of 5 to 100 hp. we will see a tremendous increase in the application of remote equipment for these jobs to obtain better quality for the user at not much greater cost," Hawk said.

"We feel very strongly that in contracting work in this size range, the industry has glamorized self-contained air conditioners as far as both the contractors and the users are concerned.

"The contractor thinks he can put self-contained units everywhere, and users have been led to believe they are the coming thing."

Packaged Units Not Answer In Certain Applications

There are certain types of applications, however, where package units are not necessarily the answer, Hawk is convinced, even though his company markets such a line.

Industrial gauge rooms where control of humidity is vital, and large, multi-story applications requiring many package units, for example, could be better air conditioned by remote systems, Hawk contends.

"This area of applications will gradually revert back to remote equipment systems," he predicts.

Self-Contained Volume Will Continue To Grow

"I don't mean that self-contained air conditioning volume will drop, because that industry will continue to grow," he explained. "But there is an area where remote systems will grow in volume.

"Users," Hawk says, "are beginning to get a little know-how on the limitations of products of our industry.

"Contractors have neglected remote jobs in recent years for various reasons," Hawk continued.

"Although margins were less on packaged units than on remote jobs, the simplification they provided in problems of installation, start-up, etc., made the contractor's over-all yearly work more profitable," Hawk admits.

Contractors More Experienced

"Today, however, contractors are more experienced in applying air conditioning, and have established reputations of their own, rather than depending almost entirely on the manufacturer. They are becoming much more independent of their franchisees."

Brunner, of course, sells its equipment through wholesalers rather than franchised dealers as a matter of policy.

This method of distribution, Hawk told the German indus-

trialists, "is the envy of every other manufacturer in the United States.

"Brunner has the strongest wholesaler organization of any refrigeration manufacturer in the industry, and the company can this year say that it is the largest manufacturer of open-type refrigeration compressors in the U. S.," Hawk further added.

H. C. Higgins Dies In Fla.

MIAMI, Fla.—Harry C. Higgins, Sr., 64, president of Harry C. Higgins, Inc., an air conditioning firm, who came here 25 years ago from Centralia, Ill., died Jan. 15.

Dean Names Ehrlich To Develop, Push Heating, Cooling Thermo-Panel Uses

BROOKLYN—Dean Products, Inc. here announces that M. William Ehrlich has become a staff member of its Thermo-Panel Div., which manufactures heavy duty heat transfer panels.

For nearly 40 years Ehrlich has been an active member of the American Society of Heating & Air Conditioning Engineers and just recently was honored by that society with a life membership.

He has had extensive experience in the broad field of power, process, and the mechanical equipment of industrial, chemical, and metallurgical plants, largely as a consultant, on design, construction, and operation.

Ehrlich "will give attention to some of the problems in heating and cooling as well as spe-

cial applications such as arise in numerous processes in America's many industries," it was stated. "He will aid in the further development and help in the wider promotion of Thermo-Panel uses."

Ehrlich has had a varied career — engineer, inventor, author, and administrator—and 20 years in the business for himself.

He has been variously associated with R. P. Bolton; R. N. Trane; D. D. Kimball; W. H. Driscoll; Homer Addams; F. K. Chew; and for the past eight years with Fraser, Brace & Co. in its New York design department as chief of the mechanical engineering division.

He contributed and participated in the Transactions of the ASHAE.

A. H. Witt Co. Purchases Refrigerator Door Firm

LOS ANGELES — Purchase by A. H. Witt Co. here, manufacturer of refrigeration, air conditioning, and coil equipment, of all rights, patterns, and jigs to refrigerator doors made by "Refrigerator Manufacturers" of Maywood, Calif., has been announced by A. H. Witt.

According to the executive, "a wide acceptance has been built up for the doors during the past several years because of certain exclusive features included in their design."

J. C. Wheeler, formerly with American Glass Refrigerator Door Co. in Hollywood, Calif., has taken charge of the new department created to produce not only refrigeration doors, but glass sliding panels for between meat cases and cutting rooms, made to tie in with the doors.

IN 1956...

get better performance... faster service with
B&G Cooling Equipment



NEW PACKAGE LIQUID COOLER

A complete cooling unit for homes, apartments, commercial and industrial buildings, process work. Design highlights include low pressure drop through evaporator—non-recycling pump-down—integrated electrical control system—low center of gravity for easy installation. Completely wired, including chiller and tower pump. Send for Bulletin MB-755.

Specifying "B&G" throughout for your air conditioning and refrigeration installations assures you of equipment known for quality—with a single manufacturer's responsibility for satisfactory operation.

B&G 1522 and 1531 Pumps, for example, have a long record for dependable economical and quiet performance. Among their many features is the "Remite" leakproof mechanical Seal—harder than glass—wear-proof!

B&G Evaporators, Condensers and other heat exchange equipment offer time-tested design—rugged construction—precision workmanship—all combined to provide top performance and long life. These units are built to ASME Code requirements.

Write today for a complete file of B&G air conditioning and refrigeration equipment literature.



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FOR IMMEDIATE SHIPMENT

To give you fast service, most frequently used sizes of the units starred below are kept in factory stock for immediate delivery. Write for descriptive literature.

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Pumps



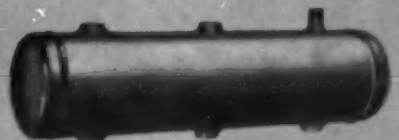
★ B&G Series 1531 Pumps



★ B&G Model CRF
Straight Tube Condensers



★ B&G Model CFG
Shell and Coil Condensers



★ B&G Model LRS Liquid Receivers

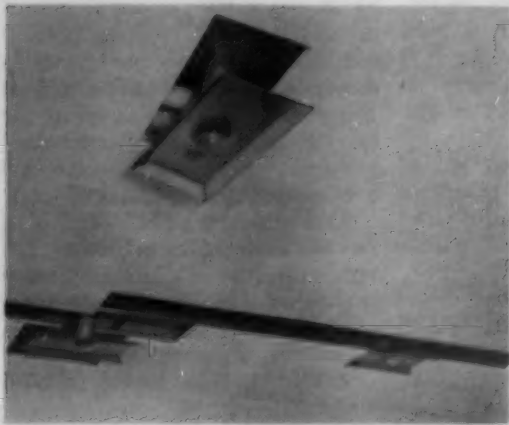


★ B&G Series RG Heat Exchangers



B&G Evaporators

Flexible Interior, Exterior Zone System Conditions Bldg. Year-Round



METAL pan ceilings and Pyle-National outlets allow quick flexibility and partitioning can be moved at little expense in the American Investment Co. of Illinois executive headquarters in Clayton, Mo.

CAREFUL spacing of induction units along outside walls provides maximum flexibility for future partitioning in the building. An office 10-ft. wide will still have its own unit, thus linking the air conditioning system with future expansion needs.



DIAL in each office enables its occupant to adjust the air conditioning to fit his own comfort needs. Controls are easily worked as demonstrated here.

you're looking at 5 hermetic compressors



MODELS P81, P8112, P81, P5312
single cylinder
hermetic compressors

THE FAMOUS *Tecumseh* PANCAKE
IN 1/8 - 1/6 - 1/5 H.P.

the same compact dimensions in a greater horsepower range

HOUSEHOLD REFRIGERATORS

FREEZERS

VENDING MACHINES

WATER COOLERS

Here's another achievement in Tecumseh's constant research to provide the refrigeration industry with functional compressor design and more efficient operation. The Tecumseh "Pancake" 1/8 and 1/6 H.P. compressor, recognized by the industry for its small size, low cost and high capacity, is now available in 1/5 H.P.

This means 5 compressors, with the same outside dimensions, and yet offering a choice of 3 different fractional horsepower ratings. Manufacturers of household refrigerators will benefit because they may now use the pancake design on most models, thus saving tooling and production costs. Freezer, water cooler and vending machine manufacturers will be able to

take advantage of the pancake's small size in their design. All will gain needed space and still maintain top efficiency.

Internal spring mountings, force feed lubrication and a new, specially designed piston give smoother, quieter operation. Tecumseh's "Pancake" compressors also feature a welded steel shell which dissipates motor heat. This is aided by the cooling action of the suction gas and in some cases an oil cooler is added for faster cooling action and better efficiency.

See your Tecumseh representative for complete information on how you can save time and money by standardizing your production line with the flexible Tecumseh pancake.

• over 21,000,000 Tecumseh compressors in use today

The World's Largest Producer of
Compressors for the Refrigeration Industry

TECUMSEH PRODUCTS CO.

Marion, Ohio

Tecumseh, Michigan

EXPORT DEPT.—P. O. Box 2280, 24530 Michigan Ave., W. Dearborn, Michigan

For more information about products advertised on this page use Information Center, page 28.

CLAYTON, Mo. — Flexibility is the keynote in the year-round air conditioning system installed in the new \$1,500,000 eye-catching executive headquarters building opened by the American Investment Co. of Illinois.

Unique design of the three-story building features inverted pyramid structures that comprise the eastern and western sides. These V-shaped structures are made of solid concrete pierced by windows shaded with concrete louvers.

The truss design frees the corners and provides a maximum of openness, allowing a minimum of sunlight penetration in summer while taking full advantage of the sun's rays in winter, the company noted.

The north and south sides, front and back, are virtually all glass. Topping the building is a set-back third floor with a roof of modified butterfly design.

The entire building is air conditioned by a 200-hp. system that permits individual thermostat control in many offices. Both the air conditioning and electrical systems are so arranged that any unit can be shifted at will. Partitions are movable and can be arranged to allow for changes.

The exterior zones are handled by an induction system, with conditioned air being supplied to individual cabinet units by means of a high velocity air-distributing system.

The high velocity air entering the cabinets induces room air into the cabinets. The mixture is further conditioned by passing over a coil in the cabinet which is supplied with either

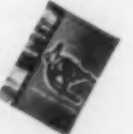
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Handy Tube Bender
Smoothly Bends any Pipe or
Tubing 3/8"-1 1/8" O.D.



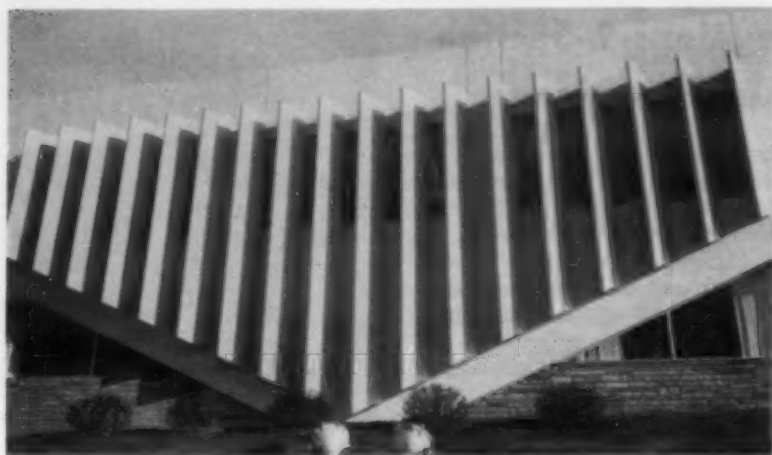
Just a twist of the wrist assures perfect, even bends — right angle, any angle, U and offset. Save enough on ONE job to pay for your HANDY BENDER.

See your supply house—or write for free folder today.



HOLSCLAW BROS., INC.

428 N. Willow Road • Evansville, Indiana



EASTERN and western sides of the building are pierced by windows shaded with concrete louvers allowing minimum sunlight penetration in summer while taking full advantage of the sun's rays in winter.

5-TON air conditioning unit in the tabulating department overcomes heat produced by a battery of electronic machines, cools them, and humidifies surrounding air for high-speed sorting of IBM cards.



American Standard Names C. A. Brunner

NEW YORK CITY—Henry Rossell, sales manager of the American-Standard Air Conditioning Div., announces the appointment of Chester Arthur Brunner as district sales representative for the Buffalo area.

According to C. A. Brunner

Rossell, Brunner will work with Air Conditioning Div. distributors in the Buffalo area in carrying out the division's intensified program of developing qualified warm air heating and air conditioning dealers.

Brunner has had wide experience in the sale, installation, and maintenance of air conditioning equipment.

Flexible Year-Round System—

(Concluded from preceding page) hot or chilled water.

Depending on the size of the room and its occupancy, one or more of the cabinet units can be controlled by a single and separate thermostat. This portion of the heating-air conditioning system is a Carrier Conduit Weathermaster system.

Interior Zones Supplied From Central Units

The interior zones are supplied with completely conditioned air from central-station type multi-zone units, with zones determined according to occupancy.

With this combination system it is possible to cool the interior zones as required by internal loads, while heating the exterior zones as required by exposure and outside weather, company officials explained.

An additional 5-ton unit was provided for the room occupied by the IBM machines in order to maintain proper temperature and humidity conditions.

Chilled Water Provided By 200-Hp. Centrifugal Unit

Chilled water for all of the air handling unit coils and induction system coils is provided by a Carrier 200-hp. centrifugal type water chiller. All of the air handling units both the high velocity and the multizone units, are also Carrier equipment.

Heat is supplied throughout the American Investment building by two Titusville-Ray boiler-burner units. Each are sized to carry approximately two-thirds of the load at design temperatures.

Air distribution to the interior zones is by Multi-vent diffusers. These are hidden on top of the metal pan acoustical

ceiling, with the furred space above the ceiling used as a return air plenum.

The temperature control system is a Minneapolis-Honeywell

pneumatic unit, providing complete zone control in accordance with occupancy and exposure.

The Corrigan Co. of St. Louis was the mechanical contractor, with the Carrier Corp. installing portions of the Inductor

system. The Ledbetter Electric Co. of St. Louis installed the electrical work.

A total of 375 hp. of motors for air conditioning and other electrical equipment is installed in the building.

WOLVERINE CAPILATOR*
The capillary tube for precision metering of gases, liquids and air.

WOLVERINE TRUFIN*
The integral finned tube that reduces unit size, steps up heat transfer efficiency.

WOLVERINE SPUN END PROCESS†
For fast, economical production of tubular shaped parts such as driers, receivers, strainers, accumulators.

WOLVERINE COMMERCIAL TUBE
Available in copper and aluminum for suction and liquid lines, evaporator and condenser coils.

FABRICATION FACILITIES
Wolverine is equipped to spin, fin, bend, coil, expand, drill, pierce—to your specification.

BRIGHT IDEAS IN COPPER

Each of the above products is job-tested—proven in countless applications in refrigeration and air conditioning. Look them over—specify Wolverine for your requirements. You'll cut costs, save time, help improve your own product's efficiency. Write today for your copy of the Wolverine Refrigeration Catalog.

WOLVERINE TUBE, 1413 Central Ave.
Detroit 9, Mich.

Wolverine Trufin available in Canada through the Unifin Tube Company, London, Ontario.

*REGISTERED U. S. PATENT OFFICE.
†A PATENTED PROCESS REG. 22480

WOLVERINE TUBE
Division of Calumet & Hecla, Inc.
MANUFACTURERS OF QUALITY CONTROLLED TUBING AND EXTRUDED ALUMINUM SHAPES

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES.
EXPORT DEPARTMENT, 11 EAST 67TH STREET, NEW YORK, 16, NEW YORK.

For more information about products advertised on this page use Information Center, page 28.

ROTARY SEAL

Replacement Units

Available in a wide size range for Commercial, Semi-Commercial, Air Conditioning and Home Refrigerators.

EASY TO INSTALL * ECONOMICAL

AT ALL LEADING JOBBERS

THE ROTARY SEAL COMPANY

2026 NORTH LARRABEE STREET
CHICAGO 14, ILLINOIS, U.S.A.

Fedders Plans 200,000 Room Units by Apr. 30

MASPEETH, N. Y.—Fedders-Quigan Corp. expects to produce 200,000 room air conditioners by the end of April as compared with 87,682 for the entire fiscal year 1955, Salvatore Giordano, president, announced recently.

As a result, he anticipates that the company will have a

profitable first six months in its fiscal year despite a \$176,755 net loss for the first fiscal quarter.

The company's fiscal year began on Sept. 1, 1955.

The net loss for the quarter ending Nov. 30 was considerably less than for the same quarter last year, when the loss was \$468,422 after tax credits. Sales for the quarter rose to \$5,883,774 from \$4,288,320 for the 1955 quarter.

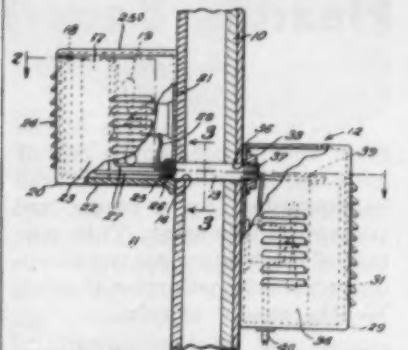
Appliance Dealer Develops 2-Section In-the-Wall Room Air Conditioner

CINCINNATI—John Palmer, a Cincinnati appliance dealer, benefits to the housewife, according to Palmer. Outside installation is said to offer many decorative possibilities.

Palmer says the air conditioner can be installed on the wall of any room in an out-of-the-way place. One section, containing the



INVENTOR John Palmer points out 1-in. pipe which runs through wall to outside section of "windowless" air conditioner. This pipe carries necessary power cords and refrigerant tubes, and is the drain for condensation.



CUTAWAY shows compact rectangular box inside room which contains only the air circulator, and the outside unit, which contains motor and all electrical parts.

motor, is placed on the outside of the house. The air circulator goes inside the room. This inside section contains the fan and cooling coils which dehumidify the air and recirculate it.

A pipe, approximately 1 in. in diameter, running through the wall, serves as a support for both sections, thus eliminating any need for structural braces, inside or out, it was stated. This pipe also carries power cords and refrigerant tubes, and is the drain for condensation.

DECORATIVE POSSIBILITIES

"The decorative possibilities appeal to the housewife," Palmer says.

One of the models now in operation has a rectangular box inside the room which could hold a small wall clock. Another unit is completely outside of the house, with just two 4-in vents bringing cool air into the home. During winter months, these small openings are hidden from view by a framed picture hanging on the wall.

"Then, too," it was stated, "there is no blocking of view from windows and no window-cleaning problems. Wall installation is simple and storage difficulties are eliminated as Palmer air conditioners need not be taken down when not in use."

3 PALMER UNITS IN OPERATION

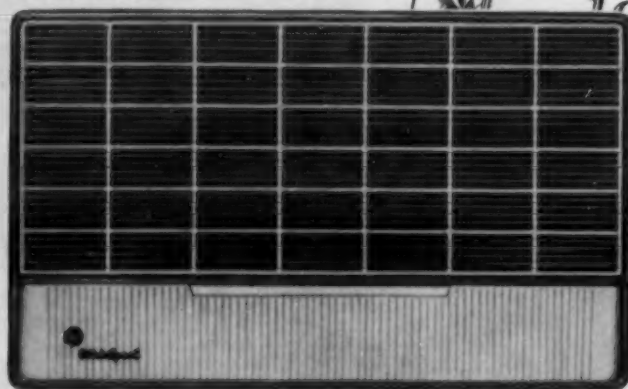
Earlier this year, there were three Palmer units in operation in Cincinnati homes. Described as "efficient and quiet," they cost about 2 cents an hour to operate and the selling price was in line with current leading models, it was stated.

As of a recent date, the air conditioners were not in production but Palmer was seeking to make arrangements with some established firm for their manufacture and sale.

Palmer is president of Golden Rule Electric Co., the firm he organized in Cincinnati 31 years ago. He resides at 2847 Robert Ave. in Westwood, Cincinnati 11, Ohio.

ONLY RCA WHIRLPOOL AIR CONDITIONERS CARRY A HOT WEATHER GUARANTEE!

Revolutionary new plan takes the worry out of the weather. See your distributor now for all the facts about RCA WHIRLPOOL'S exclusive Weather Protection Plan!



More Profit Now With the Amazing RCA WHIRLPOOL Electronic Filter

First in any room Air Conditioner!



ORDINARY FILTERS—Conventional mechanical filters screen out average-size particles of dust, dirt and pollens. Microscopic particles slip through along with the cool air.



NEW ELECTRONIC FILTER—developed first by RCA WHIRLPOOL, is the most efficient ever devised for room air conditioners. Traps particles as tiny as 1/25,000 of an inch, doesn't stop air flow.

Now you can sell the world's first room air conditioner with a true electronic filter. It's 300 per cent more efficient than ordinary filters...cuts down dust, dirt and pollens...gives blessed relief to hay fever victims...reduces house-cleaning chores. And every RCA WHIRLPOOL Air Conditioner with Electronic Filter also features electric heating! Makes these units ideal for year-'round use.

IT'S EASIER TO SELL RCA WHIRLPOOL THAN SELL AGAINST IT!



Whirlpool
AIR CONDITIONERS

WASHERS • DRYERS
IRONERS
RANGES • FREEZERS
AIR CONDITIONERS
DEHUMIDIFIERS

A Product of WHIRLPOOL-SEGER CORPORATION, St. Joseph, Michigan

For more information about products advertised on this page use Information Center, page 28.

NWAHACA Publishes 6 Revised Heating, Air Conditioning Installation Manuals

CLEVELAND — Publication of revised editions of six of its design and installation manuals was recently announced by the National Warm Air Heating and Air Conditioning Association. The revised manuals are:

"Manual 3—Calculating Heat Losses" (5th Edition). In this new edition have been added heat loss factors covering a large number of the newer methods of residential construction being used today, including many of those used in project-house buildings.

"Manual 3—Simplified Method" (2nd Edition). The same addition of heat loss factors as are included in "Manual 3—Calculating Heat Losses" has been added to this guide plus the combination of tables which make this manual easier to use.

"Manual 4—Warm Air Perimeter Heating" (5th Edition). Discusses warm air perimeter systems using 5-in. and 6-in. pipes for homes built on concrete slabs, over crawl spaces or with basements; gives design and installation data on perimeter-loop, perimeter-radial,

crawl-space radial, crawl-space extended plenum, crawl-space trunk and branch, and crawl-space plenum perimeter systems.

"Manual 6—Manual for Adjusting Winter Air Conditioning Systems for Maximum Comfort" (2nd Edition). This new edition gives simplified instructions on recommended procedures for balancing winter air conditioning systems as well as properly adjusting them for C.A.C. (Now known as Comfort Air Circulation). Includes instructions for adjusting heat input for all fuels—oil, gas, L-P gas, and stoker-fired coal.

"Manual 9—Design and Installation of Warm Air Winter Air Conditioning Systems and Year-Round Air Conditioning Systems" (5th Edition). This

manual contains design data for designing forced warm air systems for residential and commercial structures with heat losses of more than 120,000 B.t.u.h.

It also contains design data used in designing year-round air conditioning systems for structures when the heat loss supplied with a single unit does not exceed 250,000 B.t.u.h. and where total heat gain does not exceed 1.3 times the sensible heat gain.

"Manual 10 — 4-Inch Pipe Warm Air Perimeter Heating" (4th Edition). A manual for the design and installation of warm air perimeter systems using 4-in. round pipes for all warm air runs.

Systems described are "low velocity" and may be used with forced warm air furnaces rated at a total static pressure of .20 in. water gauge or comparable rating at sea level with a

temperature rise range of 70° up to 100° F., through the furnace.

Prices of these new manuals are as follows: Manual 3, \$1.25; Manual 3—Simplified, \$.60; Manual 4, \$1.50; Manual 6, 9, 10, \$1.

Thatcher Appoints Bowra As Sales Representative

GARWOOD, N. J.—The appointment of Walter Bowra, Jr. as sales representative in the Brooklyn, Queens, and Long Island area, has been announced by Russell M. Cook, vice president in charge of sales for Thatcher Furnace Co.

Bowra will assist D. J. Buckley, chief sales representative for the territory. Prior to joining Thatcher, Bowra was associated with his father in the plumbing and heating business, it was reported.

Mueller Climatrol Promotes 5 In Midwest Area

MILWAUKEE — Five promotions were announced recently by Frank J. Nunlist, vice president in charge of sales for Mueller Climatrol Div., Worthington Corp.

Those promoted were: Elmore T. Sheek, former Milwaukee area sales manager, to regional sales manager of Wisconsin, northern Illinois, and upper Michigan; M. H. "Tommy" Thomas as regional sales manager over Indiana, Ohio, western Pennsylvania, and most of Michigan; Richard B. Schmidt to Milwaukee area sales manager; Chester J. Vopal to manager of traffic and warehousing; and Fred Heise to manager of repair parts department of the firm.

Unarco Names Kramer General Manager of Heating and Cooling

CHICAGO—L. H. Kramer has been named general manager of the Union Asbestos & Rubber Co.'s Heating and Cooling Div., it was announced by Edwin E. Hokin, president.

Prior to joining Unarco, Kramer was executive vice president and general manager of the American Well Works, Aurora, Ill., manufacturer of water treatment equipment and water, sewage, and industrial waste pumps.

Kramer was a partner in the firm of Weislow and Kramer until 1942 when he was called to active duty as an ensign in the United States Coast Guard.

In the latter part of 1945, following his discharge from the Coast Guard, he was named counsel and assistant secretary for the U. S. Challenge Co. in Batavia, Ill., farm implement manufacturer, and subsequently became general manager of the company's two Batavia factories.

Janitrol Ups Reed To District Mgr.

COLUMBUS, Ohio—Appointment of Ray A. Reed as district manager for the Minneapolis territory of the Janitrol Heating and Air Conditioning Div. of Surface Combustion Corp. was announced here by H. C. Gurney, Janitrol sales manager.

Reed, who has been acting district manager, will direct sales and service activities in Minnesota, North Dakota, Montana, and sections of South Dakota, Wyoming, and Wisconsin.

For Winter and Summer Air Conditioning

SELL DETROIT'S COMPLETE CONTROL SYSTEM!



DETROIT CONTROLS' Duo-Classic System gives Simplified Control for Year-'round Air Conditioning

- ONE Thermostat
- ONE Function Selector
- ONE Universal Control Panel
- ONE Simple Installation Procedure

Duo-Classic simplifies every job!

Its modern styling, ease of use and simple installation make the Duo-Classic Control system easy to sell.

The Universal Control panel, prewired with high voltage and low voltage terminals for direct connection of the power supply and every component part of the entire heating-cooling system, is easy to install.

Since the Detroit Control Panel and Thermostat are designed for universal application, inventory problems of equipment manufacturers and wholesalers are simplified.

For complete, all-season air conditioning control, you need only install the DETROIT Universal Control Panel and the Duo-Classic thermostat. Build sales and satisfaction!

DETROIT CONTROLS supplies a complete line for the heating, air conditioning and refrigeration industries.

DETROIT CONTROLS CORPORATION
8800 TRUMBULL AVE. • DETROIT 8, MICHIGAN
Division of AMERICAN RADIATOR & STANDARD SANITARY Corporation



Representatives in Principal Cities • Canadian Representatives:
RAILWAY AND ENGINEERING SPECIALTIES, LTD.,
Montreal, Toronto, Winnipeg.



AUTOMATIC CONTROLS for

AIR CONDITIONING • DOMESTIC HEATING • REFRIGERATION • AVIATION • TRANSPORTATION • HOME APPLIANCES • INDUSTRIAL USES

For more information about products advertised on this page use Information Center, page 28.

Trade Mark
registered
U. S. Patent
Office
Est. 1926

AIR CONDITIONING
& REFRIGERATION **NEWS**

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1956,
Business News
Publishing Co.

F. M. COCKRELL, Founder

'The Conscience of the Industry'

Published Every Monday by BUSINESS NEWS PUBLISHING CO., 450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924. Subscription Rates: U. S. and Possessions and Canada: \$6.00 per year; 2 years, \$9.00; 3 years, \$12.00. All other countries: \$10 per year. Single copy price, 40 cents. Ten or more copies, 30 cents; 50 or more copies, 20 cents each. Send remittance with order.

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Advertising Offices:

New York, 531 Fifth Ave.
Murray Hill 7-7158
Robert M. Price

Chicago, 134 S. LaSalle St.
Franklin 2-8093
Allen Schildhammer

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VOLUME 77, No. 6, SERIAL No. 1,403, FEBRUARY 6, 1956



Route 3, Box 3085
Wenatchee, Wash.

Editor:

I have built up a reputation for quality fruit storage installations, and I am planning to manufacture a unit especially designed to tap this small market. Due to past and current publicity stories, a list of current prospects, and an additional list of super-satisfied customers, I firmly believe that I am 900 miles ahead of any prospective competition.

Would it be possible to print this letter as a way to ask manufacturers to contact me? I am interested in ALL components that will work in the 20° suction temperature range... compressors and condensing units from 1 to 7½ hp., air and water condensers, or both; expansion valves; blower coils in the larger sizes that will match integral horsepower compressors, and that have a defrost system of some kind; heat exchangers; water-cooled boosters; fans; motors; controls; feed valves, etc.

In short, kind reader, if you have anything that will be suitable to adapt into a very high

OFF THE CHEST

quality 20° F. suction temperature system please send me full engineering data, dimensions, prices, etc.

I have a somewhat rustic address, and although I am "small potatoes" compared to many of you "Giants of the Industry" both Mr. Dun and Mr. Bradstreet love me dearly.

ART DE DESROCHERS

1523 6th Ave., West
Bradenton, Fla.

Editor:

I am sorry to bother you—but a recent issue of AIR CONDITIONING & REFRIGERATION NEWS carried an article about a man who is setting up a museum of old refrigeration equipment. I put my copy in a special place and when I had time I looked for the article. Needless to say I cannot find it.

Nor can I threaten you if you do not choose to cooperate, because I cannot do without your publication. So if you please forward this to the museum and if they want the material—I will hear from them.

A. R. POOL

(Concluded on Page 25)

Handy Way to Subscribe

To See the Industry In Action EVERY WEEK

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on commercial and residential air conditioning, commercial and home refrigeration: manufacturing, contracting, distributing, retailing, and servicing. Read the industry's newspaper for profit every week. Only \$6.00 per year, 52 issues.

AIR CONDITIONING & REFRIGERATION NEWS

2-6-56

450 W. Fort St., Detroit 26, Mich.

Gentlemen: Send the NEWS every week for one year. ☐ \$6.00 enclosed
☐ Bill me ☐ Bill Company.

Name.....

Company.....

Street.....

City..... Zone..... State.....

They'll
Do It
Every
Time

by

Jimmy
Hatlo



The Most Important Fact In Our Business Today

(Concluded from Page 1)

ment talent. Carrier had both in abundance. Yet, Bryant had a good "following" of heating dealers whose local reputations could help Carrier carry out its expansion in residential air conditioning.

Why did Westinghouse acquire Olsen? Same reason.

And the RCA-Whirlpool-Seeger deal? Again, this complicated combination was dovetailed largely to amalgamate the best interests of distributors and dealers. All parties to this transaction were well-heeled financially, possessed adequate production facilities, and had a surplus of management talent. But each was harassed with "spotty" distribution for a variegated set of products.

We could cite similar examples of mergers for the same purpose (to get distribution) *ad infinitum*. Suffice it to say that it's a brand new economic trend—one which investors are promoting. The latter now know full well that, as "Red" Motley puts it: "Nothing happens until something is sold."

Let's examine the tails side of this coin.

Three regretful corporate funerals have occurred in our industry recently: Deepfreeze, International Harvester's refrigeration division, and the Coolerator section of International Telephone and Telegraph Corp.

Deepfreeze pioneered the home freezer. Its name for this product was as generic as Victrola, Frigidaire, or Kodak. Timewise it had a great head start in the freezer business. Furthermore, had strong financial and manufacturing backing (parent company: opulent Motor Products Corp. of Detroit). Why were its facilities, inventories, and good name abandoned?

Simple reason: Deepfreeze in recent years somehow couldn't keep the excellent distributors and dealers it once had. (The full line problem, of course, was involved; but the fact remains that lack of distribution strength buried Deepfreeze).

International Harvester and I.T. & T.—two corporate giants—kicked the bucket and lowtailed out of our industry for a similar reason. They couldn't recruit topflight sales representatives (distributors and dealers with friendly followings of "repeat" customers) for their refrigeration products, despite their money and management genius.

Why did Borg-Warner lure millionaire Jud Sayre out of retirement with a fabulous inducement? Because its directors figured,

rightly, that salesman Sayre could proselyte those good local sales organizations which its Norge division needed to become solvent again, and resume its leadership position.

All this regurgitation in high places amounts to belated recognition of a neglected hard fact:

Buyers are loyal to sellers they trust and have enjoyed doing business with over a lengthy period of time.

In all phases of our industry—household refrigerators, commercial refrigerators, freezers, component parts and every variety of air conditioning—we have witnessed top-rung manufacturing flops which shouldn't have happened. Nearly all of these washouts can be attributed to distribution.

No better testimony to this fact can be found than in the survival, and even supremacy, of relatively small manufacturers in our industry who compete against industrial colossi. They don't sell on price alone, or special deals, or temporary-product advantages. They sell continued satisfactory personal relationships. They give extraordinary service to their good friends.

All of a sudden the best distributors, dealers, contractors, jobbers—the men with solid customer friendships based upon years of fair-and-square dealings—have become the most courted and needed people in our nation. They're worth buying, not only individually, but in nationwide groupings, investors have decided.

Contrast this realistic investor attitude with dolorous predictions current today:

(1) Discount houses are dooming dealers and distributors who know how to sell, and whose customers consider them as members of their own families.

(2) Personal salesmen are a vanishing race; television advertising will create customers who will go out and buy anything even from indifferent clerks.

If these allegations were true our nation's corporate giants wouldn't be borrowing and spending and merging to acquire entire distribution systems—and the latter's backlog of satisfied and loyal customers.

P. S. May we be forgiven for "saying a few words about Texas," to crib an old story? Subscribers to AC&RN constitute the best distributors, dealers, and contractors in the world. If they aren't members of your family, as well as ours, let's get together.

1906-1956

50 years
of growth
and
progress

LINE OF CONDENSING
UNITS FOR THE AIR
CONDITIONING AND
REFRIGERATION TRADE





1956 marks the end of Brunner's first fifty years . . . and the beginning of new sales opportunities for you!

With the addition of new and redesigned models, Brunner now offers the most complete line of open-type refrigeration and air conditioning condensing units . . . from $\frac{1}{4}$ through 100 H. P. . . available from a single manufacturing source.

Outstanding is the full line of new, moderate speed compressors in the over-10 H.P. class featuring pressure lubrication, new lightweight running gear, standardized valve plate assemblies, and a new Brunner exclusive . . . an automatic switch-over system that cuts in to protect

BRUNNER
SINCE 1906

ENGINEERING FOR THE FUTURE

the compressor in case of pressure lubrication failure.

Brunner-Metic semi-hermetic condensing units are available from $\frac{1}{4}$ through 3 H.P.

Redesigned BAC packaged air conditioners will include 3, 5, $7\frac{1}{2}$ and 10 H.P. models, featuring separate discharge plenum.

Brunner dependability has long been a "buy-word" in the refrigeration and air conditioning industry. And today it's better than ever!

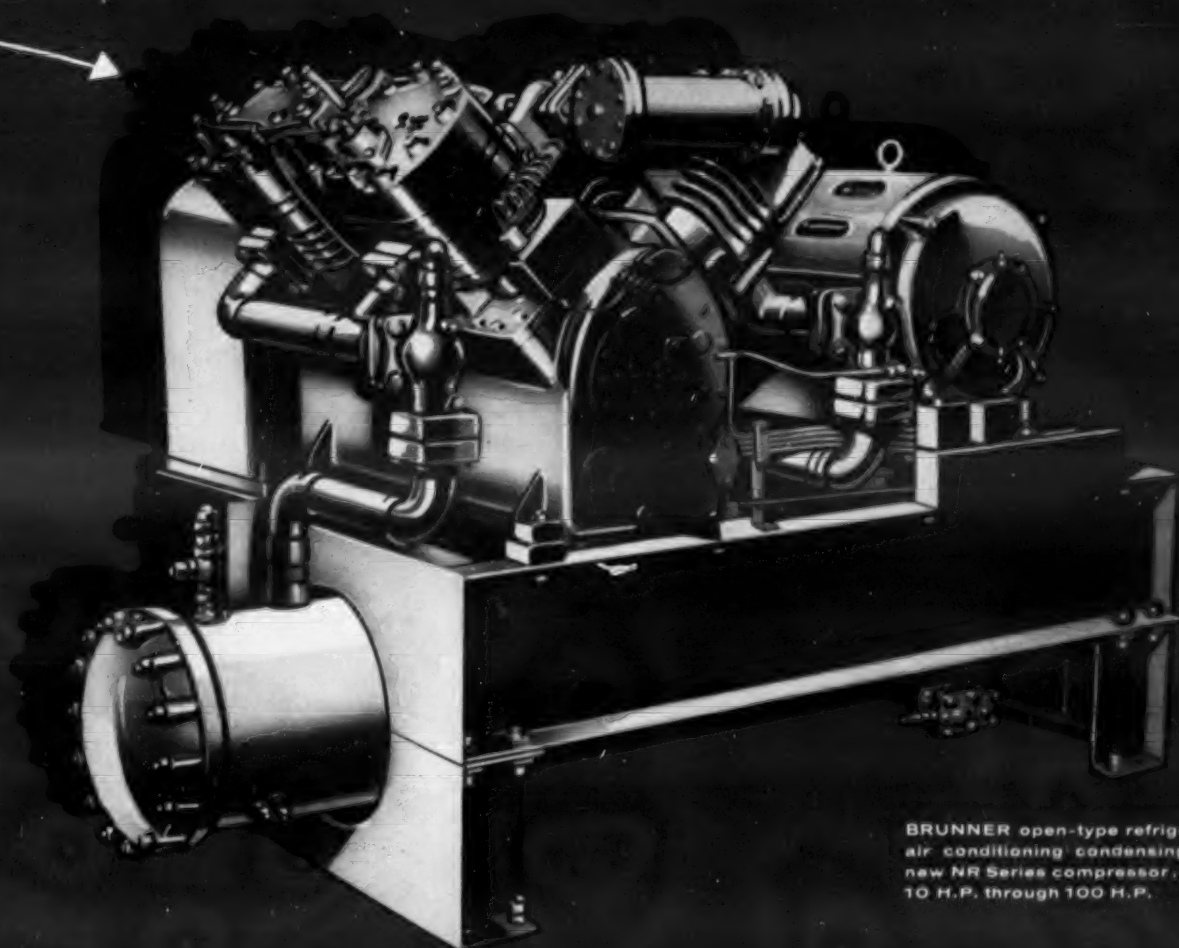
See your Brunner representative, or write for all the facts about the complete Brunner line.

BRUNNER MANUFACTURING CO., UTICA, N.Y.

The Brunner Company, Gainesville, Ga.

In Canada: Brunner Corp. (Canada) Ltd., Toronto, Ont.

AND IF YOU NEED AIR COMPRESSORS—Brunner has a complete line, for every requirement, ranging from $\frac{1}{4}$ H.P. through 50 H.P.



BRUNNER open-type refrigeration and air conditioning condensing unit with new NR Series compressor... available 10 H.P. through 100 H.P.

MEANS MORE SALES DOLLARS FOR YOU!



BRUNNER-METIC semi-hermetic refrigeration condensing unit... air-cooled or water-cooled... from 1/4 H.P. through 3 H.P.



NEW PLANT FACILITIES

PLANNED RESEARCH

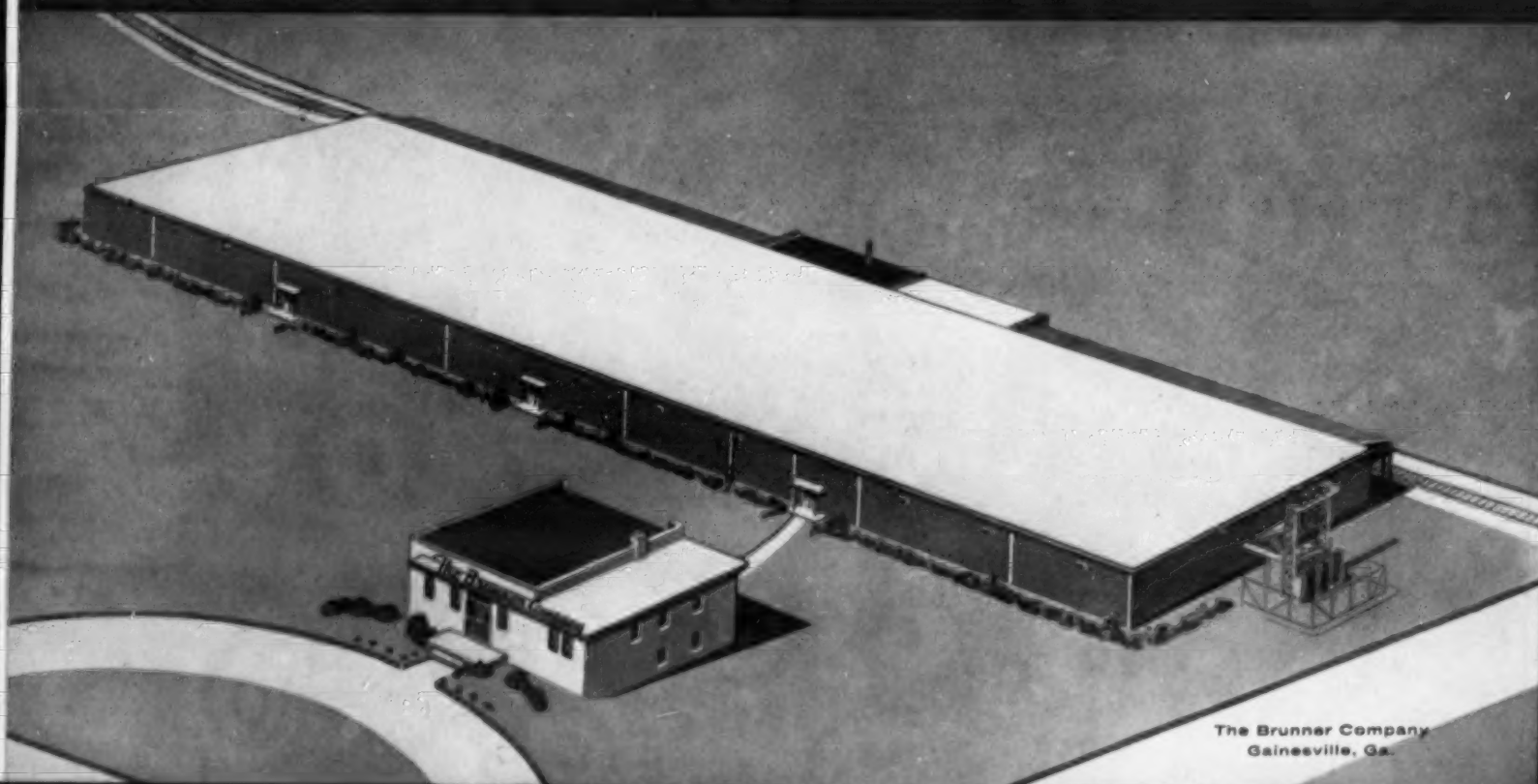
ADVANCED ENGINEERING

Increased demand for Brunner-Medco is now being met by The Brunner Company's new plant at Gainesville, Ga.

A progressive program of research and development assures continued Brunner leadership in quality and performance.

Brunner engineering offers you more sales opportunities through new applications for Brunner condensing units... plus a long list of improvements in the standard Brunner design.

BRUNNER
SINCE 1896





(Concluded from Page 20)

Fogle Electric
R.F.D. 1
Wellsville, N. Y.

Editor:

A short time ago you published an article concerning refrigeration servicemen being paid \$6 per hour for work somewhere in Nevada.

Would you please, if possible, tell me more about this item and why they shouldn't be flooded with men who are trying for these jobs?

Could you supply me the names of the contractors that this particular article was written about?

I have enjoyed the NEWS for many years. Keep up the good work.

EDWARD FOGLE

Answer: The story about charges for refrigeration and air conditioning labor in Las Vegas reported the following:

"Going rate for refrigeration service calls is \$6 per hour for labor with double time charged after 4:30 p.m."

The \$6 is the charge made to customer, but what the individual serviceman is paid is something different, of course. There is general agreement that labor charges run high in Las Vegas because (1) of some union conditions; (2) fierce competition for good men, because of the great amount of building going on in a rather thinly populated area.

Good to hear from an oldtime subscriber to the NEWS. Write and tell us about some of your own jobs, sometime. If you have some good "tricks" on service, send them in—we pay for "Service Slants" which are published.

R.F.D. 1

Canajoharie, New York

Editor:

I am a dairy farmer. Thanks to the ignorance and stubbornness of president Isenhower and Secrtairy Benson I cannot afford to spend the money for your paper. Mr. Benson won't believe what we dairy farmers tell him about our tough financial position. Some farmers have all ready gone into bankruptcy. Its too bad we farmers don't have a man like you to pound it through his thick cranium. Over four million farmers in this country with over eighty million man years are trying to get Mr. Benson to show some intelegence and common sence on the farm situation and can get no where.

How many man years has Mr. Benson put in on a farm.

It looks to us as if Washington politicians want to put U. S. farmers into bankruptcy and take over on the Russian system.

If they do you know the result as well as I do and maybe beter. No more working 7 days a week—12 to 16 hours a day for us at 15 to 50 cents per hour. Its factory wages and time or else. Its worth thinking about, especially the city people.

After 34 years of dairy farming I will have to get out of it by early spring or go into bank-

OFF THE CHEST

rupsy by fall thanks to Benson and Isenhower.

I graduated from the Utilities Engineering Institute in Chicago in 1942 but due to the war I stayed in the farming business and read magazines and your paper to keep in touch with refrigeration. Paul Reed's articles are a gold mine of information as are many other articles in your paper. I have done spare time refrigeration service on refrigerators, milk coolers, freezers etc. so as to keep my hand in.

However, this section of the country is lousy with refrigeration men.

In the Canajoharie — Fort plain area there are over 20 servicemen for a population

of about 10,000 people.

There are more grouch to bother you with; thats the people advertising for help. They seem to think when a baby is born it comes into this world with a college education and a degree in air conditioning and refrigeration engineering and also 50 years of experience the day they are born.

From my point of view I can't see anything in the refrigeration line.

There seems to be no demand for anyone except experienced engineers.

Would it be possible for me to get a job in a factory like Carrier Air conditioning in Syracuse about next April? I am 52 years old and in fairly good health.

I am considering studying Electronics this winter. There seems to be a big demand in that field.

Your Dope is good. I read it first thing. I heard you speak

at the Onondoga Hotel in Syracuse for Mr. Haverly about 4 or 5 years ago. I like the cut of your jib.

Sorry to have used up so much of your valuable time but I feel better to get some bitterness out of my system.

Even though I can hardly spare \$9 for your paper I feel I can't hardly afford to be without it.

Enclosed find check for 2 years Subscription.

CLARENCE L. BUTTON

Service Parts Co.
5442 W. Dakin St.
Chicago 41, Ill.

Editor:

It was nice seeing you at Atlantic City and saying hello again. Please come around more often.

Enclosed is a Want-Ad from the Chicago Sunday Tribune. I can't help thinking that a front page full of such expressions of

love and devotion would do us more good, particularly on Sunday, than all the scandals and political news.

I'd vote for Ike's brother or Warren, if either one ran, and I'd prefer Ike's brother Milton.

H. F. KRANTZ

Editor's note: Herewith is the advertisement referred to by the writer:

"I AM RESPONSIBLE for all debts and obligations of my wife, Veronica M.—both present and future—and am extremely happy to be the provider for this lovely woman who has borne me six wonderful children, with an over-abundance of love, understanding and care, has made the past 14 years of loving kindness the nicest years of my life.

On this, the eve of our seventh child (God willing) I wish publicly to express my gratitude."

For bone-dry refrigeration systems...



Frigidaire THURO-DRIER guards customer satisfaction... protects your profits, too!

There's a real difference in dehydrators. And it's plain to see why the Frigidaire THURO-DRIER stands out above the rest. By actual test, it removes more moisture than other leading dehydrators tested... as much as 75% more. Here is extra assurance that the jobs you install and service will give complete satisfaction.

"Desi-Bead" drying agent minimizes pressure drop, and will not break down, permitting permanent installa-

tion in any system. Special non-clogging screens filter out harmful particles.

The Frigidaire District Headquarters in your area has THURO-DRIERS from 1/4 to 20 H.P. capacity. Make it your headquarters for top quality installation accessories and replacement parts. One-stop service means economy for both you and your customers.

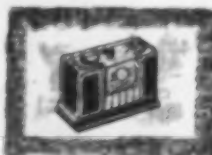
FRIGIDAIRE



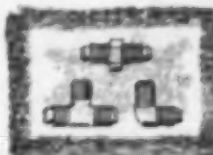
parts and accessories



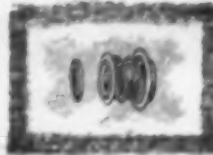
VALVES



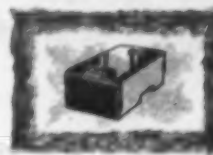
CONTROLS



FITTINGS



SHAFT SEALS



RELAYS

For more information about products advertised on this page use Information Center, page 28.

'Cobaire' 3, 5-Ton Gas-Fired Condensing Hoppers To Manage Units Made Available by Texas Utility Unarco Sales Region

FORT WORTH, Texas—Distribution of the "Cobaire," a new type of gas-fired condensing unit for air conditioning use, was assured recently when Lone Star Gas Co. bought the first production units off the assembly line at Cobell Industries, Inc. here.

The units will be available through some 425 Lone Star Gas Co. retail outlets.

The Cobaire, which may be operated on either natural or LP gas, has been undergoing field tests by selected gas companies in all parts of the nation for the past two years, it was revealed.

Two 3-ton models were set up in Lone Star executive homes in the Fort Worth-Dallas area to check operating costs under the severe climatic conditions of the

summers in the state.

Initial production for Lone Star Gas Co. will be primarily 3 and 5-ton units. Somewhat smaller than an average office desk, the units require no special equipment rooms... may be installed remote from the cooling coil. Utilization of existing ductwork in homes equipped for central heating is one of the selling features of the Cobaire.

Operating costs, according to tests, are more than 50% below the cost of operating comparable air conditioning units powered by other means than gas, Cobell President L. D. Prescott said.

Cobell's distribution plan, he noted, calls for national distribution of the units through gas utility companies and LPG operators.

CHICAGO—A. L. Hospers has been named southern regional sales manager of Union Asbestos & Rubber Co.'s Heating & Cooling Div., it was announced by Peter B. Colwin, assistant general sales manager of the division.



Hospers will supervise sales of Unarco's heating and air conditioning equipment in 11 states including Alabama, Florida, Georgia, Louisiana, Mississippi, Tennessee, North Carolina, South Carolina, Arkansas, Oklahoma, and Texas. He will maintain headquarters at 1257 Parkridge Lane, N.E., Atlanta.

First Detroit Air-to-Air Heat Pump Functions Satisfactorily Even at 7° F.

DETROIT—Despite colder than usual weather for early winter, the first air-to-air heat pump installed on the Detroit Edison Co.'s lines is performing very satisfactorily, both from the viewpoint of the utility and of the customer, Sterling S. Sanford, air conditioning engineer for the utility, declared recently.

Installed just prior to the start of the heating season in a Southfield township home, the General Electric "Weathertron" has averaged 2.5 kwh per degree day so far, Sanford said.

"So, with a normal heating season of 1,696 degree days in this area, the heat pump should use 16,000 kwh for heating only," he declared. At the 2 1/4-cent step in the residential rate,

this would amount to approximately \$350 operating cost for the heating season.

Sanford said the utility has a recording demand meter on the unit as a whole and a separate meter on the supplementary heaters, which total 13 kw. The unit is a model W66, which is rated at 86,800 B.t.u. at 0° F. d.b. outdoor temperature for heating and 56,000 B.t.u. net cooling capacity.

The home is a seven-room ranch type residence with three bedrooms and two baths. It has no basement. Floor area is 1,512 sq. ft. Well insulated, it is equipped with storm windows. A perimeter distribution system with high side wall return grilles is used. Three-phase, No. 4 wire service is employed.

"The system has heated the house without difficulty so far," Sanford said, "even when the temperature dipped to 7° F."

Sanford said that the Detroit Edison Co. is planning to install five Weathertron heat pumps in its new office building to be constructed in Pontiac. They are expected to handle the complete heating and cooling load for the structure.

Weathertron Names Marshall to Post

BLOOMFIELD, N. J.—George K. Marshall has been appointed manager-product planning of General Electric Co.'s Weathertron Dept., according to Harry L. Williamson, department marketing manager.

Marshall has long been associated with the heating and air conditioning industry, having entered it soon after his graduation from the U. S. Naval Academy in 1933, when he joined General Electric. He has been responsible for developing many new techniques in air conditioning application, service, and training.

Marshall joined the G-E Weathertron Dept. when it was organized in January, 1952, as manager-commercial engineering. Before the department was formed, he was engaged in preliminary planning for the new heat pump.

As manager-product planning, Marshall will be responsible for formulating price levels and future price trends; marketing supervision of product design; and marketing forecasts.

York Names Basford To Handle Industrial Advertising

YORK, Pa.—York Corp. has appointed G. M. Basford Co. to handle its industrial advertising and publicity effective March 1, it was announced by Ray K. Serfass, vice president and general manager of the Industrial Div.

Advertising for York's Commercial Div. remains with Brooke, Smith, French & Dorrance.

Set it and forget it...

New Ranco air conditioning control provides dual-pressure cut-outs, high pressure limit stop



Models
012-1593,
012-1594,
012-1595

Dual-pressure controls with manual reset for air conditioning systems

Here's a new easy-to-install control that assures faultless performance of every air conditioning system you service. High pressure safety cut-out and non-adjustable limit stop prevent service adjustment above the safe maximum. Low pressure safety cut-out prevents excessive low-pressure operation. And manual reset bar controls both cut-outs.

This unit—produced in three models for varying requirements—is only one of the literally thousands of Ranco Controls produced to simplify your service problems, cut your service time and increase your service profits.

Make your Ranco wholesaler the first stop on every service call.



Ranco Inc.

COLUMBUS 1, OHIO

World's Largest Manufacturer of Refrigeration Controls

Ranco Replacement Reference No. 1544

offers you additional help in selecting the right Ranco Control for the job... describes nearly 5,000 Ranco Controls by specific application. Buy your copy from your wholesaler today (not available from the factory).

George Moncher Buys Brothers Interest In Abco Refrigeration

NEW YORK CITY—A change in the partnership interests in Abco Refrigeration Supply Co. was announced recently.

George Moncher has purchased the partnership interest of his brother, Sam Moncher, who had been active in the business since 1949. The partnership interest of Jules A. Gottlieb, who has been with the company from its inception, remains unchanged.

George Moncher has been active in the refrigeration field since his release from the Navy in 1946, where he served as an engineering officer. He is a graduate mechanical engineer, a licensed professional engineer in the State of New York, and a member of the American Society of Refrigerating Engineers.

From 1951 to date of joining Abco, he was sales engineer for Bush Mfg. Co. in the New York metropolitan area.

There have been no changes in the trade-name or location of the business.

Ranco First Quarter Earnings Set Record

COLUMBUS, Ohio—Sales and net earnings of Ranco Inc. were greater in the quarter ended Dec. 31, 1955 (first in the current fiscal year) than in any corresponding quarter in the company's 42-year history, A. M. Hoover, president, told stockholders at the annual meeting.

He attributed the sales gain in part to earlier new model introduction by air conditioning, refrigeration, and automotive customers.

Sales were \$6,677,208 compared with \$4,597,427 in the like period of 1954, a gain of 45%.

Net earnings after provision for Federal income taxes were \$674,119, or 67 cents per share, compared with \$312,322, or 31 cents per share a year ago. Earnings before taxes this year were \$1,500,019 against \$724,722 in the corresponding 1954 quarter.

The increase in net earnings reflected both the gain in sales and receipt of certain commissions from Ranco, Ltd., a wholly-owned but unconsolidated subsidiary operating in Scotland, Hoover said.

Stockholders reelected all directors, and at a subsequent directors' meeting all officers were reelected.

Halstead & Mitchell Appoints R. M. Nelson

PITTSBURGH — Robert M. Nelson has been appointed district sales engineer for Halstead & Mitchell, it is announced by Horace I. Schmidt, sales manager.

He will be responsible for sales and field engineering of Halstead & Mitchell cooling towers, and air-cooled and water-cooled condensers throughout northern Illinois, northern Indiana, and western Michigan. His headquarters are at 9525 N. Shermer Rd., Morton Grove, Ill.

For the past several years Nelson has been sales engineer for I. H. Cohler Co. of Chicago.



R. M. Nelson

Before that he was district sales engineer for the Curtis Mfg. Co. of St. Louis. Nelson is a member of the American Society of Refrigerating Engineers.

General Controls Names

3 Branch Managers

GLENDALE, Calif. — J. F. Ray, vice president in charge of sales for General Controls Co., has announced the appointments of George A. Williams, Jr. as manager of the Detroit factory branch, R. C. Servat as manager of the Houston, Texas branch, and John F. Dickson as manager of the Chattanooga, Tenn. branch office.

Williams has been assistant manager of the Detroit branch. Servat formerly was manager of General Controls' New Orleans branch. Dickson has been a field representative at the Detroit factory branch, it was reported.

SLANTS ON SERVICE

"Slants on Service" is a "package" devised by the NEWS to meet the needs of its busy readers in the service and contracting business.

Tips on Installing Residential Systems

Several facts of interest to the installer of residential air conditioning systems are offered by George F. Robinson, assistant sales manager for residential air conditioning, Carrier Corp. The information was garnered from a question and answer session that followed a talk given before the Detroit section of the American Society of Refrigerating Engineers.

Questioned about problems in air conditioning multi-story houses having open stair wells, Robinson said, "you shouldn't waste money on second floor returns. Return grilles can be in-

stalled in the stair risers. On the top floor you'll probably need ceiling or high wall registers."

In answer to another question, Robinson indicated that "noise is not a factor with air-cooled condensers today. However, I wouldn't recommend installing an air-cooled condenser in a house. If there is a question of noise with the unit outside, install the condenser so that the air discharges against the wall of the house."

Asked how far away from the house an air-cooled condenser could be installed, Robinson said that "theoretically there is no limit if the lines are properly sized to return coil and avoid restrictions and pressure drop."

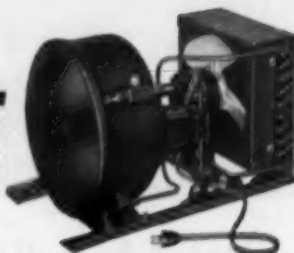
IF YOUR END PRODUCT DEPENDS ON

TROUBLE-FREE



COMPRESSORS

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CONDENSING UNITS

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REFRIGERATION SYSTEMS

WE CAN MEET YOUR REQUIREMENTS

COMPARE BEFORE YOU BUY! Prove to yourself that for trouble-free service, dependable performance and low operating cost, Kelvinator precision-built refrigeration equipment serves you best. If you have an application that calls for

hermetic compressors, hermetically sealed condensing units or hermetic refrigeration systems, a Contract Department Sales Engineer will help you determine the model best suited to your needs. Call or write today.

American Motors Corp.
DETROIT 32, MICHIGAN



**CONTRACT DEPT.
KELVINATOR
DIVISION**

SPECIALISTS IN REFRIGERATION SINCE 1914

For more information about products advertised on this page use Information Center, page 28.

SUPER-FLO
FILTER-DRYER
UP TO 5 TONS
NO PRESSURE DROP
MOLDED REMCAL DRYING
FIBERGLAS DEPTH FILTERING
Check Super-Flo's amazing low price, for both original equipment and replacement, against ordinary driers which do not have Super-Flo molded drying elements, massive fiberglass depth filters and spun-end copper shells. Available to the trade through wholesalers everywhere.
REMCO INCORPORATED
ZELIENOPLE, PA.

What's New



'Roll-A-Bout' Spot Merchandiser Offered

KEY NO. F-210

MOUNT VERNON, N. Y.—A "Roll-A-Bout," self-service refrigerated specialty case for spot merchandising of perishables in island displays and at check-out counters has been developed by C. Q. Sherman Associates, Inc.

here, it was announced by the company recently.

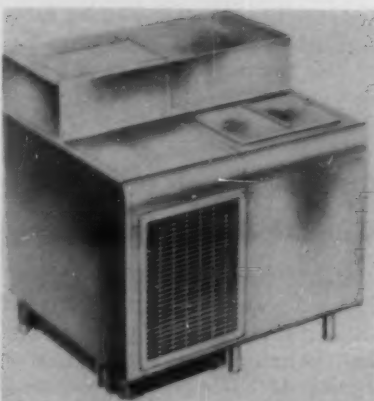
The new case, priced on a mass production basis, is ideal for supplementary display of such feature items as orange juice, milk, cheese, and by-products, luncheon meats, sodas, fruits, the company said.

"Because it is mobile, this multi-purpose case can always be rolled to heavy-traffic areas to bring perishable foods to the impulse-buying level," the company pointed out.

The compact merchandiser measures 36 in. by 30 in. by 40 in. high, with a capacity of up to (160) Canco quarts, or 7 cu. ft. It rolls on invisible rubber tread casters.

Cooling is provided by a 1/2-hp. self-contained condensing unit. Using a forced-air refrigeration system, the case requires no defrosting, the company further declared.

The exterior is baked white enamel with stainless steel trim. Two sides of the case are sealed double-pane glass, the manufacturer said.



Bastian-Blessing Designs Flaked Ice Maker

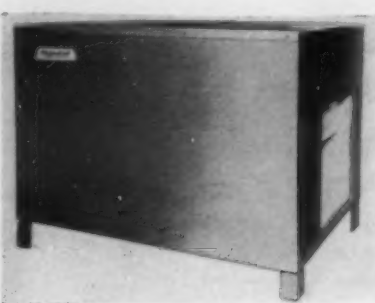
KEY NO. F-211

CHICAGO—The Bastian-Blessing Co. has announced a new electric automatic flaked ice maker which is said to "provide ice as needed for fountain-food service, in the form needed, and at the place in the fountain line-up where needed—all at low cost."

Designated model 1850, the ma-

chine freezes the water, conveys the ice flakes to a connecting insulated bin holding approximately 170 lbs., shuts itself off when bin is full, and then turns itself on again to replace flakes as they are used, it was explained.

"Capacity varies with temperature, but with water at 70° F. the machine will produce approximately 250 lbs. of flaked ice per day," the company said. "It comes complete with compressor and motor, all in a 3-ft. unit, with stainless steel facings and work top, suitable for installation in the fountain line-up."



Air-to-Air Remote Air Conditioner Developed

KEY NO. F-213

HUNTINGTON, Ind.—The Majestic Co. here has announced a new line of air-to-air remote air conditioners.

The "RA" series, as the units are designated, includes 2, 3, and 5-ton models with horizontal or vertical-flow evaporators.

The entire compressor-condenser unit is housed in a weatherproof housing, which permits installation outside the building. Controls are in a water-tight enclosure. Because of the low noise level, the unit may be located in the attic or garage if desired, Majestic said.

"An oversize air coil in the condenser provides efficient heat exchange with outside temperatures ranging up to 120° F.

"Horizontal-flow evaporator sections may be installed next to the furnace, using existing ducts; or in a closet, attic, or other convenient location, using separate ductwork. Evaporators are oversized four-row coil assemblies with ample primary surface for dehumidification and sufficient secondary surface for heat transfer up to compressor capacity.

"Vertical-flow evaporator is installed below or above the existing forced air furnace."

Iron Fireman Introduces 4 Gas, Gas-Oil Burners

KEY NO. F-212

CLEVELAND—Four new commercial gas and gas-oil burners have been announced by Iron Fireman Mfg. Co.

The gas burners are available in capacities ranging from 500,000 to 3,000,000 B.t.u. input. Combination gas-oil burners fire at rates of from 5 to 20 gals. of oil per hour. Gas burners are designed to fire with natural gas only.

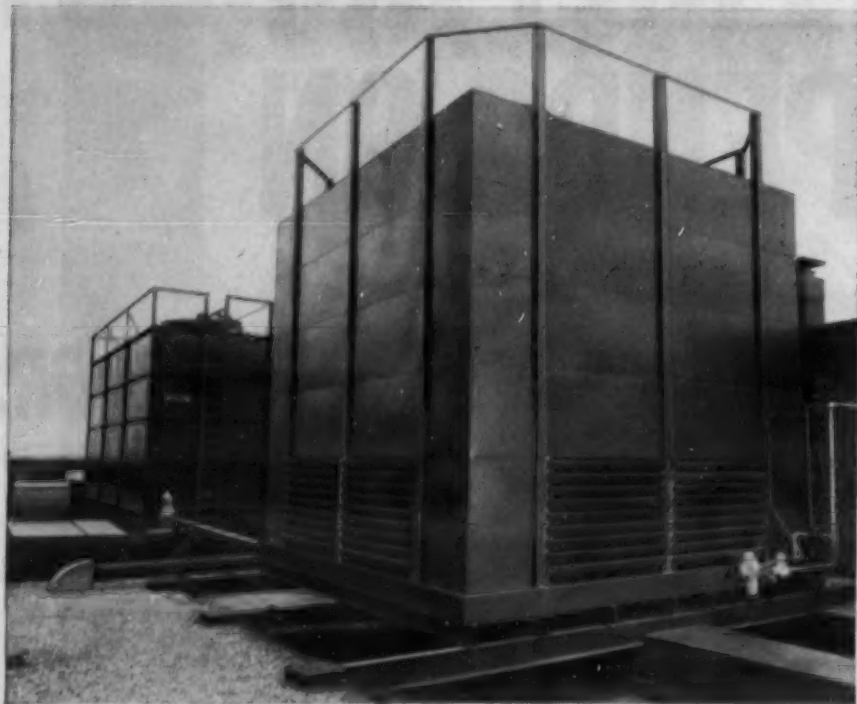
The units, fully assembled, wired, and tested at the factory, are delivered as complete packages. They are supplied with all necessary controls, including an electronic combustion control system.

Air for combustion is furnished by an integral fan when either gas or oil is fired. No secondary air dampers are required.

The combination gas-oil burners are especially adaptable to installations where gas utilities require standby oil heating equipment. Quick changeover from one fuel to another is made by the flip of a fuel selector switch.



COOLING TOWER NEWS



Here's why Chicago's Hotel LaSalle chose a Binks tower—19 years later!

Last summer Chicago's Hotel LaSalle air conditioned its public rooms. To cool the large compressors the hotel purchased a 350-ton capacity Binks cooling tower...and for good reason:

Nineteen years ago—in 1937—the hotel erected a 200-ton Binks tower on the roof, 22 stories above the street, exposed to the Windy City's constantly changing weather. As can be seen in the above picture, that tower (left) is still in excellent condition. It gives the same high efficiency cooling that it did when it was new. Its maintenance has been economical in both time and dollars—despite its exposure to the elements for 19 years. With such time-tested proof of dependability, it is no wonder that the Hotel LaSalle chose Binks to supply its new tower.

Standardized models assure economy
Binks complete line of forced and nat-

ural draft cooling towers is built from standardized panels and parts. They are available in capacities from 3 to 1000 tons. These towers are engineered to provide the correct air-to-water ratios for proper cooling, under your local conditions. They are ruggedly constructed of heavy gauge steel, protected from moisture and the elements by galvanizing and complete shop painting.

In Binks' wide range of Cooling Tower models there is one for nearly every size and type of installation... a tower that precisely fills your specifications without costly design or custom construction.

ENGINEERING HELP AVAILABLE

To help you select the right type and capacity tower a Binks Engineer will gladly study your needs and submit proposals without obligation. For full details, write to the address below:



A COMPLETE LINE OF NATURAL DRAFT AND MECHANICAL DRAFT COOLING TOWERS AND INDUSTRIAL SPRAY NOZZLES

Binks Manufacturing Company

3116-38 Carroll Ave., Chicago 12, Ill.

REPRESENTATIVES IN PRINCIPAL U.S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

Information Center

For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

Products Advertised

(list name, page, and issue date)

WHAT'S NEW OR CURRENT LITERATURE AVAILABLE

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Hussmann Offers 39-In. High Display Case

—KEY NO. F-214—

ST. LOUIS—A new line of display cases for fresh meats and frozen foods has been introduced by Hussmann Refrigerator Co. here.

Although the new cases are only 39 in. in height they have the same capacity of previous Hussmann models which were 42 in. in height.

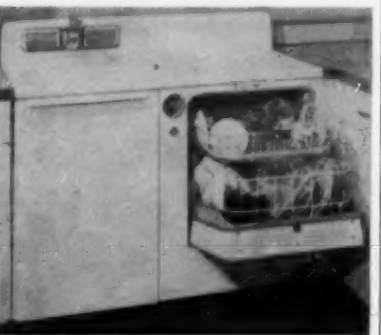
According to Hussmann, this was made possible by the use of new materials in case construction.

Both the meat and frozen food cases have improved versions of Hussmann refrigeration systems. The product area is refrigerated to a high level . . . to protect the entire display even when loaded for peak shopping periods. An automatic defrost is standard on the frozen cases.

Other improvements include a "table-top" rear rail for setting trays or boxes while stocking the display; and double bumpers in front to prevent damage from shopping carts.

The new cases also feature the Hussmann "show window" front with a 9-in. non-fogging glass to provide display visibility from across the store . . . and a temperature controlled hand rail to prevent cold shock.

The model "O" meat case is available with rear or front storage. Both the meat and frozen food cases are available with or without superstructures . . . in 8 and 12-ft. lengths.



Hotpoint Develops 24-In. Pushbutton Dishwashers

—KEY NO. F-215—

CHICAGO—A new development in automatic electric dishwashing has been announced by Hotpoint Co. on its new 1956 line of 24-in. pushbutton dishwashers.

A new device automatically injects a special water "wetting" agent solution into the final rinse water. Research tests show that because of this wetting agent, glasses, silverware, and dishes were completely spotless in 99.2% of the cases, it was claimed.

According to E. M. Haines, general manager, Hotpoint dishwasher department, the addition of this

special solution "makes water wetter" and prevents spotting caused by natural minerals found in water in most locations.

He added that such spotless drying is achieved in combination with two complete washes with fresh detergent in each. This is accomplished through a special dual-detergent dispenser.

This dispenser has no mechanical parts and is completely controlled by water action, it was stated. At the end of the first wash a cover automatically opens, releasing a second shot of fresh detergent for the second washing.

"Secret of the new 'water wetting' solution," Hotpoint said, "is that it breaks the surface tension of the water letting it 'sheet' off glasses, silverware, and dishes without forming drops."

Hotpoint 1956 automatic dishwashers include 24-in. undercounter models (MC-24 and MCP-24) in five "Hotpoint Colortone" colors. There is also a 48-in. dishwasher sink (MC-25) with or without an electric food waste disposer and a full-capacity mobile dishwasher

with maple top (MCP-23). For permanent installation, wheels of the mobile dishwasher can be removed.

Mill-Rose Produces Non-Corrosive Paste

—KEY NO. F-217—

CLEVELAND—A new non-corrosive paste recently was added to the Mill-Rose Co. line of copper plumbing supplies, the firm announced.

A soldering paste, the flux is packaged in 2-oz. or 1-lb. cans. Display cartons hold 12 2-oz. cans, the company stated.

"Clean-Fit" paste is applied to tubes and fittings after brushing, and capillary action makes solder flow evenly throughout the joint. The paste leaves no residue.

Clean-Fit line now includes soldering paste, acid brushes, wood-handled fitting brushes (regular and heavy duty), outside tube-end brushes, crank-type brush kit, metal-handled interchangeable fitting brushes, and sand cloth.

Lau Introduces 2 Residential Fan Models



—KEY NO. F-216—

DAYTON—Two new residential fans, "Super-Twenty" and "Super-Sixteen," were introduced recently by Lau Blower Co. here in its 1956 line.

Super-Twenty is a 20-in. fan with a thermostat which the manufacturer claims is sensitive

to temperature changes of less than 5°. Intended as a portable or window fan, it is supplied with expanding window spacer unit. For general portable use, rubber feet on the frame base lend sound support, the firm declared.

No tools are required to mount or remove the Super-Twenty in a spacer unit. The fan can be lifted out, rotated 180°, for either intake or exhaust. The three-speed unit moves 3,250 c.f.m. maximum.

Super-Sixteen with positive locking "Tilta-Breez" stand is rated at 2,210 c.f.m., the manufacturer stated. Blade diameter is 16½ in.

Both fans have "Futura" styling with surf-green enamel finish, "Comfortgrip" expanding handles, and controls in black and gold. White finger guards protect the smallest fingers from the blades, the firm said.

All Lau 1956 series, including Super, Ultra-Twenty, Special-Twenty, and Twin-Twelve, carry a five-year factory guarantee, it was noted.

DISPLAY sells . . . you get more display with GLASS

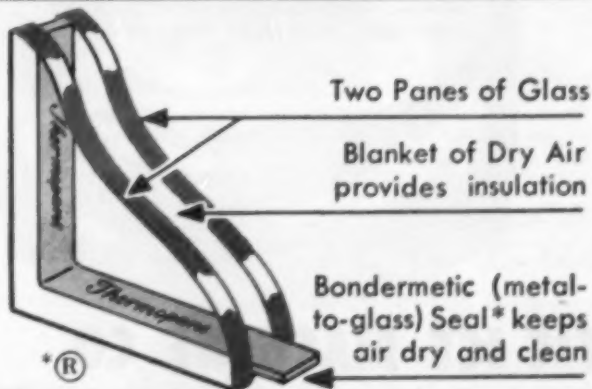


Look at refrigerated DISPLAY from your CUSTOMERS' angle

You need glass in refrigerated cases because customers want to see . . . to shop *visually* before walking over and looking down into cases. No matter how high or low your cases, a big display window of *Thermopane** insulating glass lets customers see more. And selling starts with seeing.

Thermopane combines visibility for more display with insulation for operating economy. Only *Thermopane* has the famous *Bondermetic Seal* which prevents condensation between the panes of glass and keeps out dirt. There is no organic material to deteriorate.

Thermopane is used by all leading refrigerated case manufacturers. Look for "*Thermopane*" imprinted on the seal between the panes. Libbey-Owens-Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.



Thermopane
INSULATING GLASS

LIBBEY-OWENS-FORD
a Great Name in Glass

SAVE \$10 a DAY!
Take a 350 lb. Appliance
Upstairs **ALONE!**



HYKER
WALKS UPSTAIRS—
YOU DON'T DRAG IT!
910 W. Lycoming • Phila. 40, Pa.

Cordley & Hayes Offers Compact Water Cooler

—KEY NO. F-2140—

NEW YORK CITY—A new small-sized water cooler "with an unusually fast cooling rate" has been announced by Cordley & Hayes.



Specifically designed for offices and homes where space is at a premium, this cooler is "compact and light in weight so that it can be easily moved (no plumbing connections are required)," the company said.

"Although it weighs only 70 lbs. and measures only

12 in. by 12 in. by 36 in., this unique cooler will cool 2.1 gals. per hour at a room temperature of 90° F.

"This is enough for more than

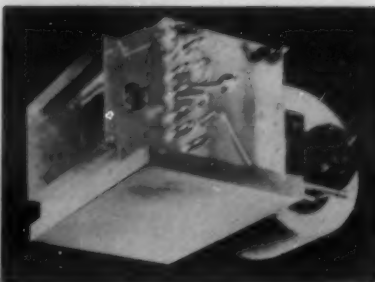
60 office workers," the firm said. The cooler has been engineered for easy maintenance and quiet operation, according to the company.

"The vertical type static wire condenser is readily accessible for cleaning," it was stated. "The hermetically sealed 1/4-hp. compressor operates so quietly that no insulating material is needed to shield against noise or vibration.

"The entire cooling equipment can be easily removed by simply disconnecting the faucet and lifting off the entire one-piece cabinet. The refrigerant, 'Freon-12,' is capillary tube controlled."

Purity of drinking water is said to be assured by a plastic bottle ring. A plastic lid is available to cover the 1-gal. stainless steel cooling container when no bottle

is used. A non-breakable plastic drain bucket is also provided. Thermostatic control permits water temperature to be maintained within desired levels. The cooler can also be used for fruit juices and other non-carbonated drinks.



Remote-Type Transom Conditioner Produced

—KEY NO. F-2141—

CHICAGO—A new Krack transom air conditioner, a remote-type unit said to give quiet, efficient performance for cooling and heating hotel rooms, motels, offices, hospitals, apartments, homes, and other multi-room units, has been announced by Refrigeration Appliances, Inc. here.

Two models are designed for direct expansion, chilled water, and hot water applications. Optional three-speed fan control pro-

vides comfort and economy of operation under a wide range of conditions, the company said. Direct-drive centrifugal fans are used.

The air conditioners are being offered at a low price, it was stated.

"Two models move 410 and 580 c.f.m. of air," the company said. "Cooling capacities are 10,100 and 14,100 B.t.u. per hour, direct expansion; 14,900 and 22,600 B.t.u. per hour, chilled water. Heating capacities are 21,600 and 38,000 B.t.u. per hour.

"Krack high efficiency coils feature the correct amount of coil surface, test-proved proportioning of tube to fit surface. Tubing is copper electro tin plated, fins multi-tube heavy-gauge aluminum.

"Specially designed fan motors feature extra-large oil reservoir and are rubber mounted on heavy steel mounting brackets. Squirrel cage fan wheels are statically and dynamically balanced.

"Units are designed for furred-in installation. Compact housings are of heavy-gauge aluminum."



100-700 Gal. Bulk Milk Cooler Line Offered

—KEY NO. F-2142—

SMYRNA, Del.—A new line of Wilson bulk milk coolers has been announced by H. E. Wickham, vice president and general manager of Wilson Refrigeration, Inc., a division of Tyler Refrigeration Corp.

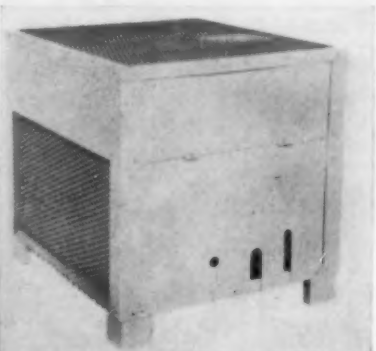
Wickham said the new line includes the following cooler capacities: 100, 150, 200, 250, 300, 375, 500, 600, and 700 gals.

In announcing the redesigned line, Wickham said there has been no basic change in Wilson's farm-tested drop-in milk refrigeration unit.

Design changes include "new dynamic tension bracing on side-walls, bottom, and ends of milk storage tanks, providing better protection against bulging or buckling than ever before. Cleaning has been made easier by new increased corner radius in covers and milk tank; and increased tank slope assures speedier milk drainage.

"New lid arrangement and new location of calibrating stick add to convenience and measurement accuracy.

"Other changes include new agitator supports and new base supports and new manufacturing standards."



Coleman Adds Air-Cooled Condensing Units

—KEY NO. F-2143—

WICHITA, Kan.—Straight air-cooled condensing units in 2, 3, and 5-ton sizes have been added by the Coleman Co., Inc., to its growing line of packaged remote air conditioning components, the company said.

The new units operate at the dry-bulb temperature of the air. Other Coleman air-cooled units condense at wet-bulb temperature cooling the condensing air by means of a recirculating water spray.

All three of the new units have hermetically-sealed compressors. Coils are copper with aluminum fins. A hinged door affords easy access to controls. The units are designed to be used with the "Blend Air" line of direct expansion plenum coils and vertical coolers.

Cabinets are waterproofed, undercoated, and finished in neutral tone Epon paint which can be painted over to make the unit blend with surroundings.

The smallest of the three models is 24 in. wide, 26 1/2 in. deep, and 23 1/4 in. high.

The 3 and 5-hp. models are available for single and three-phase current.



2-IN-1 ICE SERVICE

PAYS FOR ITSELF... Ends All "Ice Worries!"

You can use your prospects' own records to prove to them that the CRYSTAL TIPS or Chips Automatic Ice Maker will pay for itself in a short time. Many owners get their original investment back in less than a year—after that ice costs them only pennies for water and electricity.

Show them that a CRYSTAL TIPS 2-in-1 Ice Maker provides a constant, full supply of pure, fresh sparkling Tips or Chips—the "cube" size Tips, or by the flip of a switch, the fast cooling Chips. No crusher! No grids! No fuss! No muss! No waiting around for deliveries!

Its versatility, convenience, proved dependability and smart design makes the CRYSTAL TIPS or Chips Ice Maker the leader in the field. Write us for franchise details.

Crystal Tips or Chips

AUTOMATIC ICE MAKER

..Saves up to 90¢ out of every dollar spent for delivered ice!

AMERICAN AUTOMATIC ICE MACHINE CO.

1781 FOURTH ST. N.W., FARGO, MINN. A subsidiary of McQuay, Inc. Manufacturers of Heat Transfer Equipment since 1922

For more information about products advertised on this page use Information Center, page 28.

Tiffin Art Metal Buys Earnshaw Sheet Metal

MANSFIELD, Ohio—Sale of Earnshaw Sheet Metal Supply Co. here to Tiffin Art Metal Co., Tiffin, Ohio, effective Jan. 3, was announced by A. G. Earnshaw, president of the Mansfield concern.

Headquarters of the company will be in Tiffin, and the Earnshaw company will be operated as the Mansfield Branch of Tiffin Art Metal Co. The company also has branches in Toledo, Ohio, and South Bend, Ind.

Earnshaw will be retained by Tiffin Art Metal as adviser and consultant on public relations and education in heating, air conditioning, and sheet metal distribution activities of the firm.

He is vice president of two national associations in this field, the National Heating and Airconditioning Wholesalers Association and the National Association of Sheet Metal Distributors.

The Earnshaw company has operated in Mansfield for the past 17 years, as wholesaler of warm air heating and air conditioning equipment as well as of sheet metal supplies. The firm is distributor for the Luxaire-Westinghouse warm air furnaces and air conditioning equipment.

Tiffin Art Metal has been in this business for 53 years. Its president is John P. Speck. The firm manufactures galvanized roofing, eave trough, and conductor pipe, furnace fittings and supplies, and outdoor advertising structures, and is a wholesale distributor of Mueller Climatrol heating and air conditioning equipment and other supplies to the sheet metal trade.

Bryant Holds Regional Distributor Meeting

ATLANTIC CITY, N. J.—Bryant distributor principals and sales personnel gathered here recently at the Haddon Hall hotel for the first 1956 regional sales meeting held by the company.

Over 100 distributors and distributor personnel from Bryant's eastern, southeastern, and central sales regions attended the one-day sessions, according to Howard L. Clary, Bryant vice president and director of sales.

They were given a preview of Bryant's 1956 product line and expanded advertising program for the new year. Bryant executives also unveiled new dealer sales promotions and sales training plans.

Guest of honor at the Atlantic City meeting was Richard N. Jones, advertising director of *House & Home* magazine, who spoke on "The Home Building Industry in Transition."

Noting the "revolution" in home building and its implications in the sale of component equipment, Jones discussed the marketing problems facing the producer who must first sell the team of builder, architect, pre-fabricator, mortgage lender, and appraiser on the value of his product in helping re-sell the entire "package."

Airtemp Series of TV Commercials Covers Room Units

CHICAGO — Wilding Productions, Inc., Chicago, has developed a new series of TV commercials for Airtemp Div., Chrysler Corp., featuring the company's "Forward Look" 1956 line of room air conditioners.

The series, designed for local sponsorship by Airtemp distributors and dealers, includes three 60-second and five 20-second spots, narrated by Carlton Kadell, well-known announcer.

Though commercials of this nature appear only briefly on TV screens, a sizable staff is required for their production, it was pointed out.

Participating personnel include: writer, producer, director, cameraman, set designer, etc.

UNARCO DEALER PLUS PLAN

See Next Week's Issue

AIR CONDITIONING & REFRIGERATION NEWS

FEB. 13th

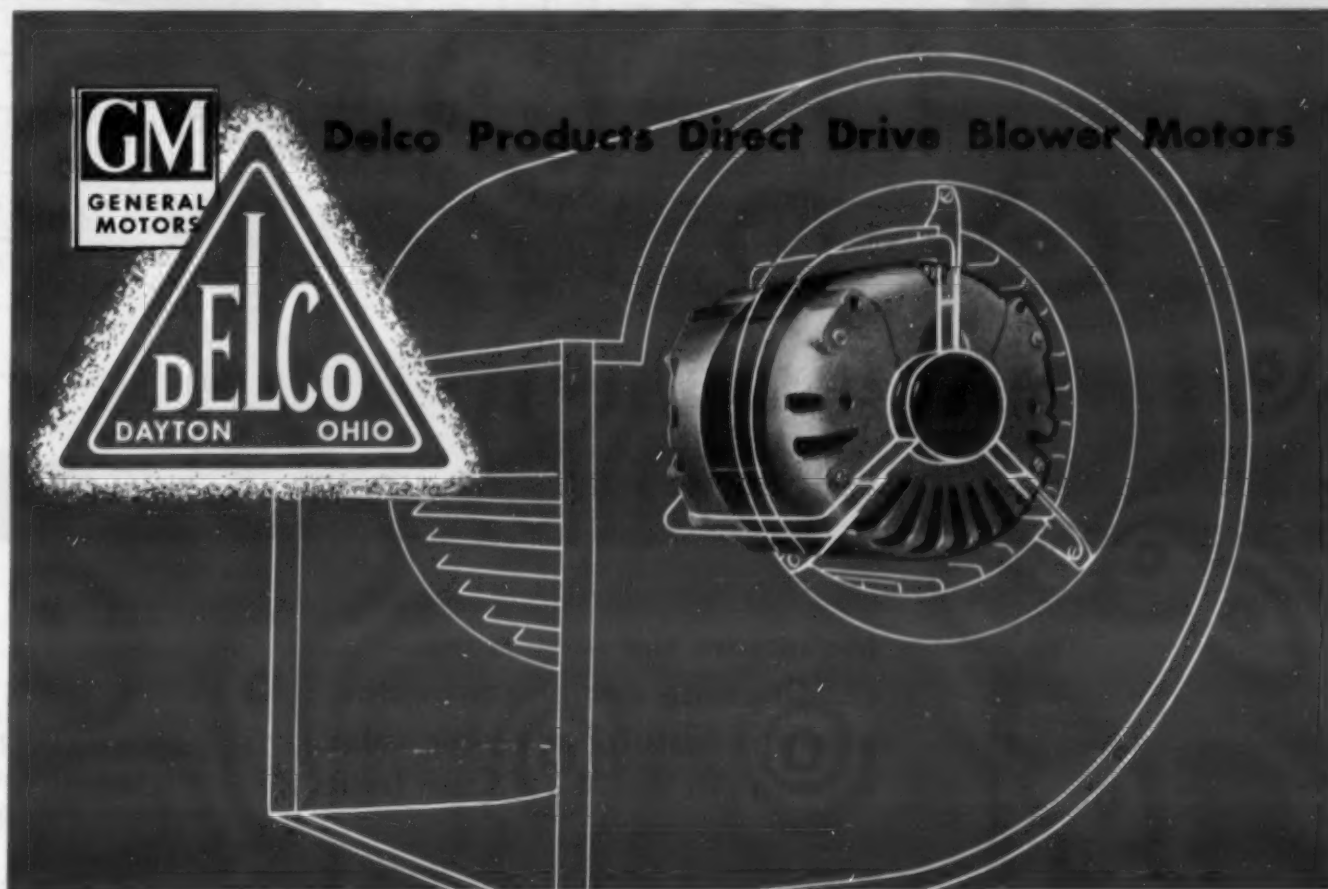
UNARCO *It tells all about* UNARCO

UNARCO \$100,000.00 DEALER PLUS PLAN

THE MASTER SERVICE MANUALS - - -

— — — and other books of the Refrigeration Library are depended upon as textbooks in trade schools from coast to coast.

BUSINESS NEWS PUBLISHING CO., DETROIT

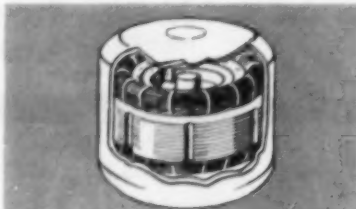


Cut Weight, Lower Your Costs

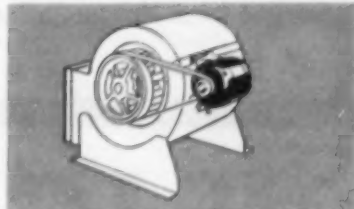
You can simplify your blower design; make the blower more compact, lighter, and—best of all—lower in cost, by using Delco Products direct drive blower motors.

Only Delco Products makes direct drive blower motors in all four commonly used types; shaded pole, extended winding, permanent split-capacitor and split-phase, to suit your particular needs. All of them have heavy structural internal ribs in the end frames, bearings supported at both ends, and deep, precision-fitted, mating tenons in end frames and main frames. This combination makes the whole motor rock-rigid.

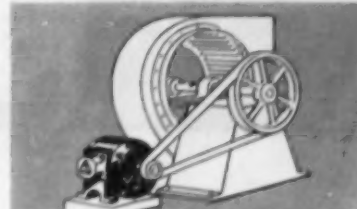
Delco Products application engineers, backed by the experience of thousands of air-moving applications, will gladly help you select the most satisfactory and economical type of motor for your application. There is a Delco Products electric motor to fit every air-moving and refrigeration job, from 1/250 h.p. shaded pole models for refrigeration condenser cooling to integral h.p. polyphase motors for ventilating and exhaust systems. And they're sold and serviced throughout the world. For help on your motor problems, contact your nearby Delco Products Sales Office or Delco Products, Dayton, Ohio.



DELCO PRODUCTS HERMETIC MOTORS for refrigeration compressors. Four-pole models, 1/12 to 10 h.p. Two-pole, 1/8 through 15 h.p.



DELCO PRODUCTS BELT DRIVE MOTORS. Split-phase, capacitor-start, and polyphase fhp models for fans, blowers and compressors.



DELCO PRODUCTS POLYPHASE INTEGRAL HP MOTORS in rerated NEMA frames now provide more power per pound than old style motors.



DELCO Electric MOTORS

DELCO PRODUCTS, DIVISION OF GENERAL MOTORS, DAYTON, OHIO

Proved best by Performance!

For more information about products advertised on this page use Information Center, page 28.

OF SPECIAL IMPORTANCE TO YOU:

AIR CONDITIONING "SHOW CASE" ISSUE

March 12

FEBRUARY						
S	M	T	W	T	F	S
			1	2	3	4
			8	9	10	11
5	6	7	14	15	16	17
12	13	14	21	22	23	24
19	20	21	28	29		
26	27	28	29			

MARCH						
S	M	T	W	T	F	S
				1	2	3
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4	5	6	7	14	15	16
11	12	13	20	21	22	23
18	19	20	27	28	29	30
25	26	27	28	29	30	31

Make sure the largest air conditioning dealer-contractor group in history sees your sales message in the Show Case Issue.

YOU DON'T HAVE MUCH TIME!

Closing date for the March 12 "Show Case" Issue is March 2—so start making plans for your sales attack now!

Your advertisement in the March 12 issue of the NEWS is of special importance to you—so make sure it's forceful and prominent as only you can make it!

March 12 is the date of the special "Show Case" issue, which will be read—and re-read—by the largest air conditioning audience in history. More than 21,000 manufacturers, contractors, and dealers will be watching for this issue. It will contain the most complete line-up of factual air conditioning information ever assembled.

"Show Case" will present detailed, up-to-the-minute specifications on all makes and models

of packaged residential and commercial air conditioning equipment—including your line! Your products—and your competitors'—will be presented for inspection and fact-by-fact comparison. In addition, there will be dramatic new fact-filled market studies, new applications, and new field-proved sales methods.

Manufacturers, distributors, contractors, and dealers alike will be receptive to your sales message in "Show Case." They'll be in a decision-making mood . . . a buying mood! Your advertisement will be seen again and again throughout the year because readers will keep "Show Case" handy for constant reference.

Advance requests for extra copies and orders from non-subscribers are already being received. Make sure your products are given the prominence and prestige they deserve—start planning your display in "Show Case" right now!

There will be no increase in rates for "Show Case"—closing date is March 2. Call your NEWS' representative today for a space reservation.

AIR CONDITIONING & REFRIGERATION

The Newspaper of the Industry

NEWS

450 West Fort Street, Detroit 26, Michigan
NEW YORK, 521 Fifth Ave., MUrray Hill 7-7158, Robert M. Price.
CHICAGO, 134 S. LaSalle St., FRanklin 2-8093, Allen Schildhammer.
DETROIT, 450 West Fort St., WOodward 2-0924, J. B. Sullivan.



The Newspaper That Carries More Advertising By Far Than Any Other Publication In The Field.

Transite Warm Air Duct Installation Outlined

—KEY NO. R-210—

NEW YORK CITY—"Transite Warm Air Duct," a four-page folder recently issued by Johns-Manville, presents the installation and performance advantages of asbestos-cement Transite as a duct for perimeter heating and air conditioning systems.

The folder covers both radial and loop perimeter systems and includes photographs of various Transite Warm Air Duct installations. Complete information on sizes, lengths, and fittings is given. Several methods of joining are pictured and described.

Hose, Duct Usage Shown In Flexaust Bulletin

—KEY NO. R-211—

NEW YORK CITY—Flexaust Co. here recently issued its new bulletin 60 which gives latest information on product prices, it was reported.

The six-page colored illustrated folder diagrams and explains "Flexaust" hoses and "Portovent" ducts for moving air, dust, fumes, and materials by pressure, suction, and gravity.

Illustrations show uses of the items, how to cut, couple, connect, suspend, and adapt each. Industrial prices for hoses and ducts including accessories are charted, the company said.

Bulletin Explains Oil Leak Detection

—KEY NO. R-212—

ELIZABETH, N. J.—Issuance of a new eight-page illustrated bulletin on "Paraprobe Oil Leak Detection System for Steam-Type Oil Heaters" was announced recently by Davis Engineering Corp. here.

Possible damage to the boiler in event of the return of oil-contaminated condensate is eliminated through use of this protective system, the company claims. It provides a continuous automatic check on purity of the condensate steam on existing systems, the company said.

Bulletin 80 details operation of the system, includes installation diagrams, standard specifications, and method of determining rate of flow of condensate.

'Electric Doorman' Units Illustrated In Catalog

—KEY NO. R-213—

MINNEAPOLIS—"Electric Doorman" refrigerator door units are described in a new 12-page bulletin issued recently by the Electric Power Door Co., Inc. here.

The catalog illustrates actual installations, and includes blueprints, erection diagrams, selection tables, and construction features along with hardware and recommended control systems.

An added feature is information on the company's engineering service available to industrial and commercial users.

Electronically Cleaned Air Case History Issued

—KEY NO. R-214—

MCKEES ROCKS, Pa.—A case history of air cleaning in Rockford Memorial hospital, Ill. recently was published by Trion, Inc. here, the company reported.

New literature calls attention to electronically cleaned air. The four-page folder explains the Trion air cleaner which electrically charges dirt, collects it on a series of plates having opposite charge, and eventually washes collected dirt away, the firm stated.

Shell-Tube Heat Exchanger Performance Tabulated

—KEY NO. R-215—

SAN FRANCISCO—Simplified performance curves rather than tabulated performance data are incorporated in the new 32-page technical catalog on shell-and-tube type heat exchangers issued recently by the E. C. Cooley Co.

The curves cover converters, instantaneous heaters, and process equipment marketed under the "Thermxchanger" trade name.

According to E. C. Cooley, president, tabulated data fails to give an accurate picture of heat exchanger performance under varying field conditions.

On the other hand, he said, equipment selected from curves which cover the full performance range can cope with future or seasonal needs of the system in which the installation is to be made.

Also covered in the catalog are comparisons of the various types of shell-and-tube heat exchanger equipment.

General Controls Describes Full Line

—KEY NO. R-216—

GLENDAL, Calif.—General Controls has published a new catalog describing its complete line of air conditioning and refrigeration controls.

Many new controls plus latest improvements and changes in the General Controls line are cataloged for the first time. Also cataloged are the locations of General Controls' five major plants, seven warehouses, and 40 factory branch offices serving the U. S. and Canada.

2-Color Catalog Covers Berko Glass Heat Panels

—KEY NO. R-217—

QUEENS VILLAGE, N. Y.—A new eight-page, two-color catalog embracing the entire line of glass electric radiant heat panels was recently issued by Berko Electric Mfg. Corp. here.

Catalog GC-101 also includes information on both low voltage and

line voltage thermostat controls. Illustrations of every item manufactured, together with installation pictures and instructions, and construction diagrams are also in the catalog, the company said.

A single specification sheet, SS955, giving data and pictures on both sides is another piece of literature released, the company added.

Essex Wire, Cord Line Detailed In Brochure

—KEY NO. R-218—

FORT WAYNE, Ind.—The complete line of Essex refrigeration and air conditioning wire and cord is described in a new four-page brochure offered by Essex Wire Corp. here.

Included in this pamphlet are heater wire, internal refrigeration, room cooler and air conditioning wire, lighting circuit wire, lead wires, flexible conduit, thermostat cable, and power supply cords. Complete data concerning size, insulation, dimensions, temperature ratings, construction, and approvals is shown.

Marlo Illustrates Remote Room Air Conditioner

—KEY NO. R-219—

ST. LOUIS—A comprehensive new 16-page illustrated bulletin on the construction, operation, and application of Marlo "Seazonaire" remote room air conditioning units was published by Marlo Coll Co.

Marlo Seazonaire air conditioning provides individually controlled units for multiple installations.

The bulletin explains Seazonaire floor and ceiling-type models, free standing, and recessed.

2 Booklets Describe 'Milkeeper' Bulk Cooler

—KEY NO. R-2110—

CHICAGO—Two pocket-sized booklets describing its "MilKeeper" bulk milk cooling tank are offered by Creamery Package Mfg. Co.

One presents a picture story on the ease of installation and simplicity of operation of the MilKeeper. The other answers the question: "What Type of Bulk Farm Cooling Tank Should We Buy?"



The Sign of Quality Motor Control



Governair model SCU-25, 25-ton packaged air conditioner uses Allen-Bradley Bulletin 709 solenoid starters in sizes 0, 1, and 3.



Governair model PWD-30, 30-ton packaged water chiller uses Allen-Bradley Bulletin 709 solenoid starters in sizes 1 and 3.

ALLEN-BRADLEY
TROUBLE FREE
MOTOR CONTROLS
ARE "STANDARD"

ON GOVERNAIR *Refrigeration Units*

REASONS WHY ALLEN-BRADLEY STARTERS ARE FIRST WITH REFRIGERATION AND AIR-CONDITIONING MEN**simple design**

Only ONE moving part... the secret of trouble free switch operation.

**dependable operation**

No pivots, pins, hinges, or friction parts to cause starter trouble.

**maintenance free contacts**

Double break, silver alloy contacts never need cleaning or filing.

**reliable over-load relays**

Provide continuously reliable motor protection irrespective of service.

Year after year Allen-Bradley controls gain in popularity especially among air-conditioning and refrigeration men... and there are good reasons. Allen-Bradley controls give continuously dependable service without maintenance over long periods of operation.

Extreme simplicity enables Allen-Bradley solenoid starters to provide trouble free service... only ONE moving part.

There are no hinges or pivots to bind

and cause trouble... no pins or bearings to wear. And the cadmium silver alloy contacts never need cleaning, filing, or dressing. You can install Allen-Bradley controls... and forget them. Specify Allen-Bradley control—it stands for millions of trouble free operations.

Allen-Bradley Co., 1313 S. First St.
 Milwaukee 4, Wis.

In Canada—
 Allen-Bradley Canada Ltd., Galt, Ont.



What Was New

At the Home Builders Show



—KEY NO. F-218—
CALLING ATTENTION to the new Lennox Industries, Inc. "Stowaway" 2-ton air conditioner, Model Marilyn McMahon draws a crowd to the Lennox exhibit with the help of Don Carter of the Biddle Co.



—KEY NO. F-2111—
EITHER 2 OR 3-TON cooling coil section fits atop Carrier Corp.'s new compactly designed "Winter Weather-maker" gas-fired furnace, note George Wessler, western residential specialist (l.), and George Robinson, assistant sales manager at Carrier-Syracuse.

—KEY NO. F-219—
STANDING BY the compressor unit for the new 3-ton, 100,000 B.t.u. year-round air conditioner in the foreground is Stan Bastable, district manager for the Williamson Co. Williamson offers 118 different furnace models and 38 cooling unit combinations. The year-round unit is also available in 2 and 5-ton capacities.



—KEY NO. F-2112—
NEW "FLEXI-COOL" cooling unit for duct installation was displayed at Worthington Corp. booth. R. R. Peterson, Worthington sales representative stands between the cooling unit and the remote air-cooled condensing unit that serves it.



—KEY NO. F-2110—
"SLASHED PRICES" on Westinghouse' newly-designed air-cooled condensing units for residential use interests Robert Pixley of the South Kansas City Furnace Co. (center), who gets details from T. J. Mullen (r.), and Howard Blair of Westinghouse Electric Corp.'s air conditioning division.



—KEY NO. F-2113—
BUILT-IN WALL AIR CONDITIONER only 15 in. deep is demonstrated by George E. Berk, sales promotion manager for Lewyt Air Conditioning Corp.



—KEY NO. F-2114—
COMPACT CONSTRUCTION in new UsAirco year-round air conditioner in 2 and 3-ton capacities is emphasized at the United States Air Conditioning Corp. booth by J. E. Craig, sales manager for packaged refrigeration (l.), and R. P. Kelley, UsAirco general sales manager.



—KEY NO. F-2115—
10,000TH TRION electronic air cleaner for installation in homes was gold-plated and displayed by Trion, Inc. R. E. Sweitzer, Trion sales manager (l.), explains its operation to H. P. Rockfellow.

New compactness in air-cooled AIR CONDITIONER design!



Smallest air-cooled, self-contained 5-ton central type unit made.

5 natural wood-grain finishes available on all free-standing models.

Completely automatic, thermostat controlled, air-cooled condenser. (Water-cooled available on 5-ton).

MODEL RO-575W
(with air distribution head)

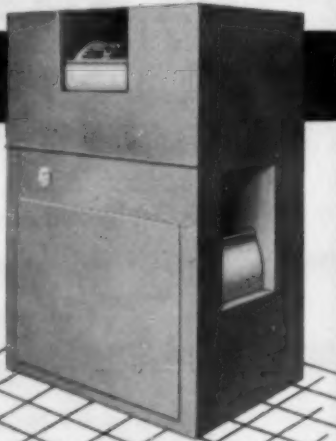
Complete air conditioning for entire home—or equivalent commercial or office area—at the lowest cost in smallest space! GENERAL AIR CONDITIONERS deliver 2, 3 or 5 tons of cooling. All models operate on standard outlet (220 V, single and 3 phase except 2-ton—single phase only).

Attic, roof, outside, or free-standing units.

NATIONWIDE SALES AND SERVICE

Offices and warehouses:
LOS ANGELES • ATLANTA
BOSTON • CHICAGO
CLEVELAND • HOUSTON
KANSAS CITY • MIAMI
NASHVILLE • NEW YORK
PHILADELPHIA
SAN FRANCISCO • SEATTLE
ST. LOUIS • TAMPA

WRITE today for details. Franchise dealerships available.



MODEL RO-525A
(without air distribution head)

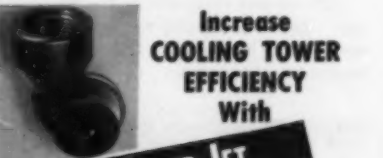
GENERAL AIR CONDITIONING CORP.

Dept. N-22 • 4542 E. Dunham St.
Los Angeles 23, California

FIVE YEAR GUARANTEE—easy payment plan



—KEY NO. F-2116—
NEW AIR CONDITIONING THERMOSTAT by General Controls Corp. is pointed out by D. S. Sterner, manager of the company's refrigeration and air conditioning division (l.), to M. G. Dessauer, mid-western representative.



Increase COOLING TOWER EFFICIENCY With

ASPIR-JET

Aspir-Jet, the new spray nozzle, increases efficiency of cooling towers by increasing water break-up and improving water distribution. This is accomplished by the Aspir-Jet unique design which atomizes the water with as little as one-half pound nozzle pressure.

Formed of butyrate plastic, Aspir-Jets last longer because they do not corrode. Thousands already in use are giving better cooling even with lower than normal pressures.

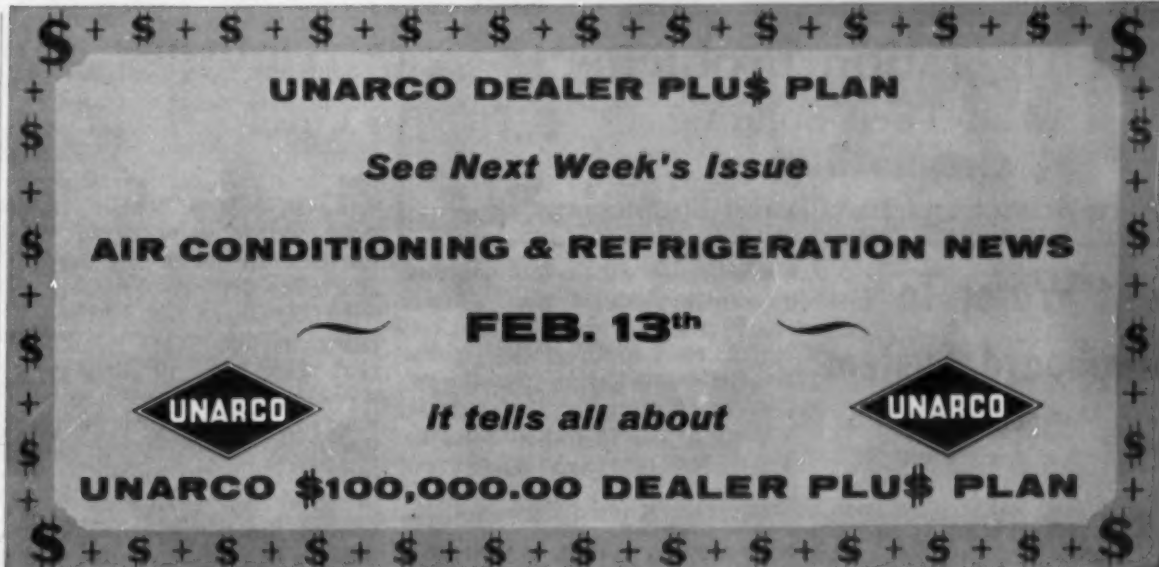
Available through Refrigeration and Air Conditioning Wholesalers. Manufacturers & Refrigeration Wholesalers: if you are not now using or stocking this astounding new product, write or write

THERMAL AGENCY

National Sales Agents
1515 DALLAS • HOUSTON, TEXAS

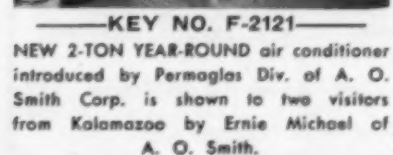
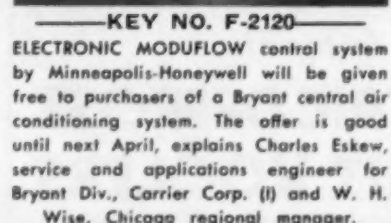
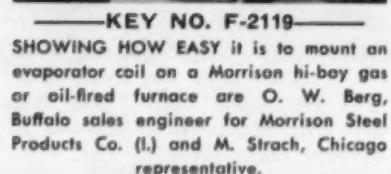


NEW CONCEPT of installing room air conditioners in kitchens is demonstrated at the Hotpoint Div., General Electric Co. booth by Joan Beard of Chicago. Unit is installed in cupboard and ducted to outdoors.



— — — and other books of the Refrigeration Library are depended upon as textbooks in trade schools from coast to coast.

BUSINESS NEWS PUBLISHING CO., DETROIT



ANOTHER G-E relay, slightly larger, is this sturdy, inexpensive Type ARR-1. It's designed specifically for starting single-phase, capacitor-start, and capacitor-start, capacitor-run fractional- or integral-horsepower motors.

FOR FURTHER INFORMATION contact your nearest Apparatus Sales Office. General Electric Company, Section 740-85, Schenectady 5, New York.

For more information about products advertised on this page use Information Center, page 28.

Refrigeration Problems And Their Solution

By Paul Reed

For Service and Installation Engineers



Salt Water In a Shipboard System

One of the compensations for conducting this column for over a dozen years, has been the many letters that have been received from readers, and the friendships that have been formed thereby. Since the News is distributed all over the world, it is pleasant to number among our friends-by-correspondence, readers in many foreign countries. As a rule, the letters are in English, which is fortunate, aunque podemos leer espanol un poco.

A few years ago we received a letter from a reader in the refrigeration service business in a city on the coast of Brazil a few degrees south of the equator. He had had a bit of an argument with the engineer of a ship on whose refrigeration equipment he had been doing some repair work, and he wrote us to settle the argument.

Since then we have exchanged several letters. A recent one may be of interest to our readers particularly those here in the States, for it may hearten them somewhat to compare their troubles with the difficulties under which this reader had to work.

Without his express permission, we will not mention his name, but he is a Norteamericano from Chicago, Ill. Much of his work seems to be marine refrigeration, although he also services all types of refrigera-

tion equipment and, in addition, radio, appliances, etc.

In reading his letter, bear in mind that south of the equator their seasons are just the reverse of ours, so it is summer there now, although in his location near the equator, there is little difference in temperature the year around—always hot.

SERVICING A MARINE SYSTEM

"Just a bit more than a week ago, I had a real tough job. A ship headed north for New York, came in with one of her two condensing units out of operation, and the coils in the vegetable, fish, and freezer rooms, full of sea water." (The condenser was evidently a salt water condenser, which had apparently burst, or sprung a leak, flooding the system—Ed.).

"The other unit was trying to carry the entire refrigeration load. To make it worse, there was hardly any 'Freon' available.

"Since I have had this type of job before, I didn't want to take it, for it is very difficult to get all of the water out of the system. It was a fairly large job, on which the liquid lines were 1/2-in. copper and the suction lines on inch or larger, with long runs of tubing and large blower coils in all three rooms.

"One cannot bring the refrigerant pressure up in the rooms, for they were kept rather cold by the other unit. There were heaters on the coils, that could be closed up, and the heat turned on to defrost the coils, but even this didn't do a good

job for it was too cold in the rooms.

"I would have used by Ideal blower with its heat nozzle, but it is 110 volts, and the ship's power was 220 volts, and there was not rheostat available to drop the 220. So I blew out as much water as I could with nitrogen, although it's hard to get really dry nitrogen here.

"Also, I used some 50 lbs. of silica gel, by using a large drier that takes 5 lbs. of silica gel at a charge. Blowing out the coils, and using the silica gel took practically two days and nights, with intermittent running.

"Even then, I felt it necessary to dose the system with alcohol, using four liters (about a gallon total—Ed.) and taking out the permanent drier used in the system. After two more days of running, the system seemed to refrigerate alright.

"I think that it will stand up until they reach New York, where they can get a new condenser to replace the one repaired temporarily. Of course, I informed them that the whole system will probably be entirely copperplated, with so much water and alcohol in it.

"After a few days sailing, and they cross the equator and get farther north, the weather will get cooler. Even then I have my fingers crossed that it will hold until they get into New York.

"Some of the personnel aboard the ships, especially the ordinary freighters, have little or no knowledge of refrigeration equipment. I try to teach them, somewhat, but there isn't much basis to work on.

"For instance, the man on this ship who looked after their refrigerating machines, was very ill because he had been in one room in which there had been a large leak. There was, of course, a great deal of gas in the room and he had been in there with a torch trying to lo-

cate it. The crew was afraid to come in the room with me, when I was using a torch to find the leaks, even though I aired the rooms out as well as I could.

"Moreover, their torch may have been defective, for they said that it did not show a leak. Mine did though, but the chief engineer was skeptical as to whether it was OK or not until I took it topside and it cleared up at once.

"I find that when 'Freon' escapes in a freezer, it sticks to the walls and food for weeks. Due to this condition, it is practically impossible to know whether you have a leak repaired right or not, for they seem never to have much ventilation available.

"And speaking of ventilation; it takes a lot of sweat, just going up topside from the hot engine room, then down to the coolers, and vice versa. After a couple of days of this, first the hot engine room, then topside, then the below-freezing temperature of the freezers, makes you wonder if it is worth while.

"However, I like to do a good job, so I had this ship wait some thirty hours before leaving, for I wanted to make sure that they would have a reliable system for the long trip north, especially since they had a few passengers aboard; although it was really a freighter loaded mostly with cocoa, cocoa butter, mamona, fibers, and other products.

"Their main engine was a 7-cylinder diesel that gave them a speed of about 15 knots, so it would take them about 15 days to get to New York.

"They left here on the 17th and for two days afterward I was not good for much of anything, for a job like that upsets my entire schedule. I have to do most of my own work, for it's impossible to hire anyone who will do things they way I want them. I do have a young fellow that I have trained to paint and do odd jobs. He likes it so much I have to chase him out of the place at night.

"However, this morning I have been out on a job aboard a tug here in the bay, and this afternoon I have to see the Coca-Cola plant here. Their water cooler is down. Together with the domestic business, the radios, and with a couple of radar jobs, it keeps me going all of the time."

Virginia Smelting Adds Studwell, Cox

W. NORFOLK, Va.—The refrigeration sales department of the Virginia Smelting Co., announces the appointment of two new sales representatives, Earl S. Studwell and Luther Cox.



E. S. Studwell

Studwell makes his home at Flossmoor, Ill., and will travel the states of Iowa, Nebraska, Minnesota, Wisconsin, and northern Illinois.

Cox, a native of Alabama, will live at Raleigh, N. C. and will cover Virginia, North Carolina, the District of Columbia, and portions of South Carolina and Maryland. He succeeds Robert J. Wygal, who returns to the manufacturing division of the plant at West Norfolk.



Luther Cox

Penn Controls Issues Application Chart

GOSHEN, Ind. — Penn Controls, Inc. has released a new comparative application chart for mechanical cooling controls.

This handy application chart (Form 3078) was designed to make the selection of the correct control easier for the user. This chart lists the Penn control for each application and also the comparable control of several competitor makes.

Mueller Brass Names Hendrix to Post

PORT HURON, Mich.—The appointment of Henry G. Hendrix as sales representative for the Mueller Brass Co. was recently announced by A. C. Dappert, vice president in charge of sales.

He has been assigned to the company's Los Angeles territory where he will assist Theodore Howard.

Hendrix was formerly with the Chase Brass & Copper Co.

TAME TOUGH Refrigeration PROBLEMS with "JOB TAILORED"



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SAVE money with DEAN "job tailored" cold plates... made *exactly* in the size you need—in zinc metalized steel, stainless steel and other metals—in cylinders, U's, angles, tanks, etc. Also in plates for baudelot-type coolers.



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Complete defrosting is automatically done with electrically heated air circulated within the unit while the door is closed. Sufficient heat is immediately available at all times regardless of amount of ice accumulation. Internally wired at factory. Krack engineered for many years of dependable performance.

Write for New Bulletin ED-1055 Today!

Pioneers in Refrigeration & Air Conditioning Equipment Since 1931

'Low Cost' Tri-Level Heating, Cooling Impossible, Nessell Investigation Shows

NEW YORK CITY—Few heating systems provide complete comfort in "tri-level" houses and the cooling is "in worse shape than the heating," according to C. W. Nessell of Minneapolis-Honeywell Regulator Co.

Chief problem with heating seems to be obtaining comfort conditions in the lowest level of these homes, Nessell told the 42nd annual convention of the National Warm Air Heating & Air Conditioning Association here.

Nessell is chairman of the association's field investigation committee. Assigned to investigate low cost heating and cooling in tri-level houses, Nessell commented:

COMFORT NOT ATTAINABLE AT LOW COST

"To begin with, I have come to this definite conclusion: if we're going to have satisfactory cooling and heating in most of our tri-level houses, we might as well make up our minds to scratch off the 'low cost' part of it and forget about it. We're not going to have comfort in low cost installations," he asserted.

Virtually all of his discussion was devoted to heating problems because, he explained, "we are first going to discover how to do a good heating job." Suggestions for cooling will come later, he said.

Incidentally, Nessell commented that "tri-level" was perhaps a misnomer for these homes since their investigation turned up "bi-levels," three levels, four levels, and five levels.

"And I suppose some enterprising builder may add a sixth or seventh level on it about the time we have figured out how to heat three or four levels," he groaned.

STRUCTURAL PROBLEMS

One of the problems of heating and cooling multi-level houses, Nessell pointed out, results from the structural arrangement.

"I have been in some of these houses where the structural arrangements were such that the timbers and beams ran helter-skelter in all directions. It was virtually physically impossible to run a straight continuous duct from one end of the house to the other."

Obviously, cooling and heating contractors "are going to be obliged to get into the builder's or into the architect's office in advance of the time that he throws the plans at us," Nessell declared.

Reporting on his investigations, Nessell told the group "that the degree of comfort in these houses is the best on the top level, medium on the middle level, and very poor in the lower, or basement level."

In one house, he said, temperature difference between the floor and the 30-in. height was 13.32° F. in the basement level, and the difference from floor to ceiling amounted to exactly 32° F.

POSSIBLE SOLUTION

Possible solutions to the problem of satisfactorily heating the lowest level can be summarized from Nessell's discussion as follows:

1. If slab construction is used,

edge insulation is required, the warm air duct should run through the slab, and perimeter registers should be located at floor level (instead of ceiling or high side wall outlets normally used) beneath windows of the room.

2. For those rooms over a crawl space, a moisture barrier (concrete or roll roofing) should be placed on the soil and heat introduced into the crawl space.

3. A zone system which would rebalance air flow from time to time without completely shutting off air flow in one area "might be the most advantageous."

4. Continuous air circulation "is an absolute must," he declared.

Furnace Code Proposed

Warm Air Group Urges Buffalo To Adopt Installation Ordinance

BUFFALO—Adoption of a city code for furnace installations and conversions was urged recently by Earl E. Gaiser, president of the Buffalo Warm Air Association.

Gaiser said his group has been "working for four years" for such a code as "almost every city of comparable size in the nation has," but that "apparently there hasn't been enough sentiment or catastrophes to stir public action."

The last meeting with city officials, Gaiser said was last summer when codes of three national heating and ventilating groups were submitted as the basis for a city code.

Gaiser commended the coop-

eration of John C. Quinlan, of the Air Pollution Control Div., and Lee Uhrich, assistant chief of the city's Fire Prevention Bureau.

Quinlan said a meeting on such a code would be held in his office. He said he plans to send a request for action soon to the Common Council. Quinlan said he agreed to the need for a new ordinance, but that his office cannot enforce the present "stopgap" ordinance because of insufficient manpower in his office.

"There are 1,500 homes in the city not inspected right now because the city won't give me the manpower," emphasized Quinlan.

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RIGHT EQUIPMENT
TO TAKE THE
SALES PENNANT?



Go General Electric! Your salesmen get complete training for biggest Packaged Air Conditioner Profits

TEACH A MAN air conditioning, or selling, or both—or make a good air conditioning salesman better! Do it without wasting your time and energy—by putting G.E.'s packaged Sales Training Course to work.

This down-to-earth course, crammed with selling facts, is built on the actual experience of top packaged air conditioning salesmen all over the country. It covers *all* the bases. It includes slides, films and records. And it's flexible—can be used in your own place of business, at training meetings or by correspondence school.

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selling price as soon as customer O.K.'s installation. You offer customers *four* separate generous payment plans.

CALL your G-E Packaged Air Conditioner distributor now for full facts on a G-E dealership. Or write: C. J. Rigby, General Electric Company, Commercial & Industrial Air Conditioning Dept., 5 Lawrence St., Bloomfield, New Jersey.

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6318 Cambridge, Mpls. 16, Minn.
West 9-6794

What Was New At the Home Builders Show



—KEY NO. F-2122—
TWIN 1-HP. COMPRESSORS are featured in the new 2-ton packaged air-cooled deluxe water chiller introduced by A. Brown Products Corp. William H. Peters, advertising manager (l.), and Abe Brown, president, flank the unit.

Pictures of products appearing on these pages are from the 12th annual convention-exposition of the National Association of Home Builders held in Chicago from Jan. 22-26. For further data on any of the items use the "Information Center" blank on page 28 of this issue. Please refer to products by the key number which accompanies each picture. Additional pictures appear on pages 34 and 35 of this issue.



—KEY NO. F-2126—
NEW YEAR-ROUND air-cooled air conditioning unit with gas or oil-fired furnace was exhibited by General Electric Co., Air Conditioning Div. C. M. Toelear, manager of commercial engineering, stands by remote condensing unit, while H. N. McMenimen, Jr., division sales manager, points to the furnace.

—KEY NO. F-2123—
PREFABRICATED, insulated duct system for air conditioned homes called the "Fiberglas" plenum system, was displayed by the Owens-Corning Fiberglas Corp.



—KEY NO. F-2125—

CHECKING DATA on Coleman Co.'s new model "Air Mist" condenser for residential air conditioning applications are B. H. Dwyer (l.) and W. J. Hopkins of the Sidles Co., Des Moines, Iowa. The condenser is available in both liquid chilling and direct expansion models.

—KEY NO. F-2127—
3.4 TONS OF COOLING with a 2-hp. compressor is the claim for new "Rheem-aire" unit shown by Rheem Mfg. Co. Flanking the unit are (l. to r.) Charles L. Ruff, Jr., of Detroit, Paul J. Felzek, eastern division product manager for Rheem, and L. W. Stitt, also of Rheem.

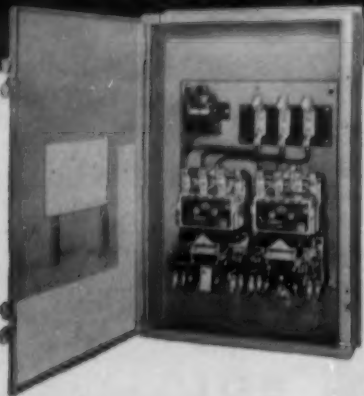


—KEY NO. F-2124—
"DO IT YOURSELF" residential air conditioning system was installed overhead in the Philco Corp. booth. Ernie Breault of Philco Distributors, Chicago (center), shows a section of the Fiberglas duct that is supplied with the 2-ton unit for installation by the purchaser.



—KEY NO. F-2128—
WALNUT GRAIN FINISH is feature of the new 5-ton "General Chef" air-cooled packaged unit emphasized by James Kercheval, vice president of General Air Conditioning Co. (l.), to Carl Crandall of Detroit.

FURNAS ELECTRIC CONTROLS do the best job for AIR CONDITIONING



Write today for Air Conditioning Bulletin 5410—1111 McKee Street, Batavia, Illinois.

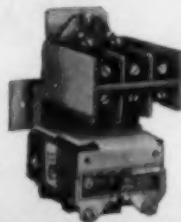
Increment Starters

Objectionable voltage drops eliminated by using a Furnas Electric Increment Starter for Part Winding motor applications. Compare—no expensive auto transformers, no resistors, small size. Increment starting incorporates the advantages of other types of step starting at the lowest cost in the smallest space. Pick the size you need. In-between sizes—a 10, 20*, 30, 40* and 60 hp. size 220 volts.

*Major savings with in-between sizes.

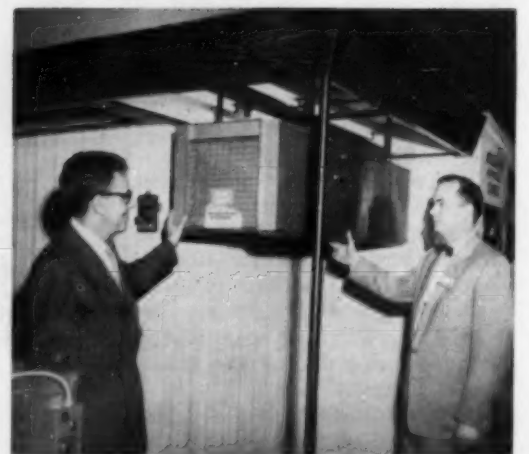
Special Starters and Contactors

Designed for low cost control of hermetic motors. Two sizes—20 and 30 amps • Dual voltage starter coils • Interchangeable parts • Super Quick Trip Thermal Overload units.



FURNAS ELECTRIC COMPANY
BATAVIA, ILLINOIS
SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES

—KEY NO. F-2129—
NEW HORIZONTAL MODEL self-contained air-cooled 2-hp. air conditioner is shown by Don Davidson, field representative for Mueller Climatrol, Div. of Worthington Corp. (l.), to Dan Dorge of Chicago.



—KEY NO. F-2130—
NEW "MONCRIEF" 5-hp. year-round air conditioning unit with water-cooled compressor gets the attention of J. S. Garber, advertising manager (l.), and E. H. Morris, Chicago district representative, in the Henry Furnace Co. booth.

UNARCO DEALER PLUS PLAN

See Next Week's Issue

AIR CONDITIONING & REFRIGERATION NEWS

FEB. 13th

UNARCO

It tells all about

UNARCO

UNARCO \$100,000.00 DEALER PLUS PLAN



KEY NO. F-2132

BY MARCH 1, EUREKA-WILLIAMS CO. will have a new air conditioning unit to go with this gas-fired furnace, according to J. M. Gleason, general sales manager.



KEY NO. F-2136

A-TYPE COIL for plenum installation on Heil Furnace Co. gas or oil-fired furnaces was demonstrated to builders by Lee Davidson, Milwaukee district representative. The coil is available with 2, 3, and 5-ton remote condensing units.



KEY NO. F-2137

SLIDING THE COOLING COIL out of the base of the Day & Night year-round 2-ton air conditioner is Don Young, field representative for Day & Night Div., Carrier Corp. Air-cooled condensing unit that matches conditioner is at his feet.



KEY NO. F-2138

STANDING IN FRONT OF Century Engineering Co.'s new combination heating and cooling unit is W. S. Moeller, general sales manager of the heating and cooling division. The unit provides 2 tons of cooling and 125,000 B.t.u. of heating.



KEY NO. F-2139

SHOWING OFF the Majestic Co., Inc.'s new year-round downflow gas-fired furnace with 3-ton air conditioning unit, all in one package, is Lewis Morton, assistant sales manager of the heating division.



KEY NO. F-2133

ALL IN ONE CABINET are a 3-ton water-cooled air conditioning unit and a 105,000 B.t.u. gas-fired forced air furnace, Charles Martin, advertising manager for Utility Appliance Co., tells Mrs. Pat Friedman of Evanston, Ill.



KEY NO. F-2134

"DUO-CLASSIC" THERMOSTAT with compact control panel for year-round air conditioning captures the attention of M. D. Hagen (l.) and Steve Kownacki, both Detroit Controls Corp. sales representatives in Chicago.



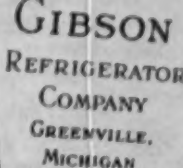
KEY NO. F-2135

"AIRLINE" DIFFUSER for low pressure distribution of both warm and chilled air at the baseboard is shown by W. J. Ward, Kansas City regional manager for the Ingersoll Air Conditioning Div. of Borg-Warner Corp.

MORE
FAMOUS NAMES
SELECT

McQuay

RIPPLE-FIN COILS for
AIR CONDITIONING UNITS!



McQuay INC.

★ AIR CONDITIONING ★ REFRIGERATION ★ HEATING

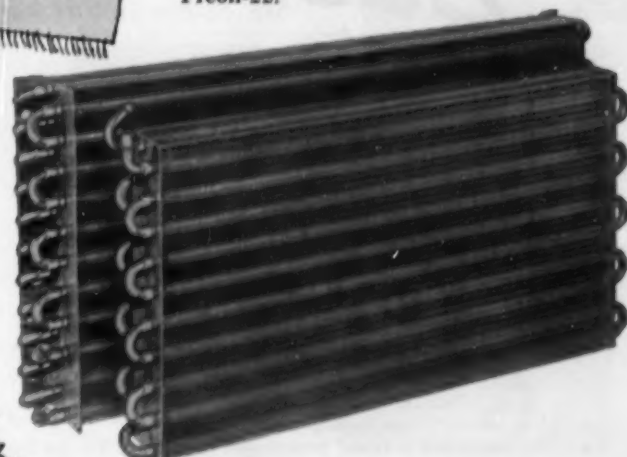
Write for engineering assistance on any coil problem. McQUAY, INC. 1607 Broadway N. E., Minneapolis 13, Minn.

For more information about products advertised on this page use Information Center, page 28.

EMINENCE of the manufacturers of air conditioning equipment who rely on McQuay to supply them with Ripple-Fin coils for their air conditioning units is the best recommendation for our product.

More and more famous names are buying McQuay's proved and preferred line of coils... the complete line offering all of these advantages:

- Coils constructed with copper tubes and aluminum fins.
- Wide variety of fin spacings, rows deep, fin heights, finned lengths and circuiting patterns for maximum flexibility in custom engineering to meet specific applications.
- Staggered tubes and continuous corrugated fins with full fin collars for maximum heat transfer.
- Ripple-Fin edges for greater strength and more pleasing appearance.
- Latest procedures for cleaning, degreasing, dehydrating, and sealing of coils for shipment, insuring maximum protection.
- Coil construction approved by Underwriters Laboratory for use as evaporators or condensers with either Freon-12 or Freon-22.



Maximum heat transfer efficiency of
Ripple-Fin Coils is a McQUAY EXCLUSIVE!

Only McQuay gives you Ripple-Fin surface—the product of years of research that produced the ultimate in heat transfer for any weight metal as well as construction ruggedness and eye appeal.



Servicing Automobile Air Conditioners

BY C. DALE MERICLE

This is the final instalment describing the air conditioning system employed by American Motors Corp. in its Nash automobiles. Next in the series will deal with the Mark IV automobile air conditioner.

Makes previously discussed have included A.R.A. Frigikar, Automotive Air Conditioning, Pivot, Novi, Oldsmobile, Buick, Pontiac, Chevrolet, and Ford.

NASH (5)

American Motors Corp.
14250 Plymouth Rd.
Detroit 32, Mich.

Service Diagnosis

Expansion valve.

a. Charge lost from bulb. If this occurs, valve will close tight and suction pressure will

pull down into a vacuum. To check, remove bulb from suction line and hold in hand. If no change in suction pressure is noted, the charge is lost.

b. Faulty super-heat setting. Cooling is adequate but frost-line moves past bulb. This condition, of course, could damage compressor by allowing liquid refrigerant to reach compressor.

c. Moisture in system would

be detected at expansion valve by frost and by suction pressure rising and falling. When checking for moisture, energize solenoid by-pass valve so that system will not operate on the by-pass.

Condenser.

A condenser which becomes plugged up with leaves, bugs, and dirt will not perform properly and will result in high head pressures.

Filter.

A clogged filter will result in low suction pressure. If filter is clogged, temperature of refrigerant leaving filter will be cooler than that entering filter. Expansion valve will also sound a hiss.

Solenoid by-pass valve.

A defective by-pass valve will not close or stay closed, resulting in lack of cooling because refrigerant is by-passed.

Thermostat.

A faulty thermostat will not cycle the by-pass system. Install the gauge manifold set, place a thermometer at the discharge air outlet, and operate the system. If the temperature drops well below 32° F. and stays there constantly, the thermostat is not cycling the by-pass system.

At the same time watch the gauges. Upon cycling the suction pressure rises and the discharge pressure drops. If the gauges indicate cycling, but temperature stays below 32° F., setting of the thermostat is too low.

Low suction pressure.

This can be caused by:

- Low refrigerant charge.
- Plugged filter, expansion valve, liquid line.
- Super-heat setting of expansion valve too high.
- Expansion valve bulb charge lost.
- Inoperate blower fan.
- Failure of thermostat to cut out.
- Moisture freezing at expansion valve.

High suction pressure.

Possible causes include:

- Leaky or broken compressor valves.
- Low refrigerant charge.
- Clutch slipping.
- Loose drive belts.
- Faulty expansion valve.

Low head pressure.

Possible causes include:

- Low refrigerant charge.
- Leaky or broken compressor valves.

High head pressure.

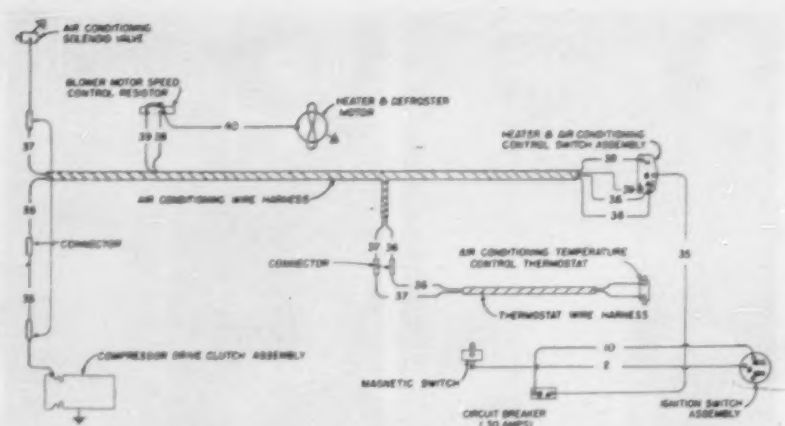


FIG. 10—Wiring diagram for air conditioning system employed in 1955 Nash "Ambassador" and "Statesman" models.

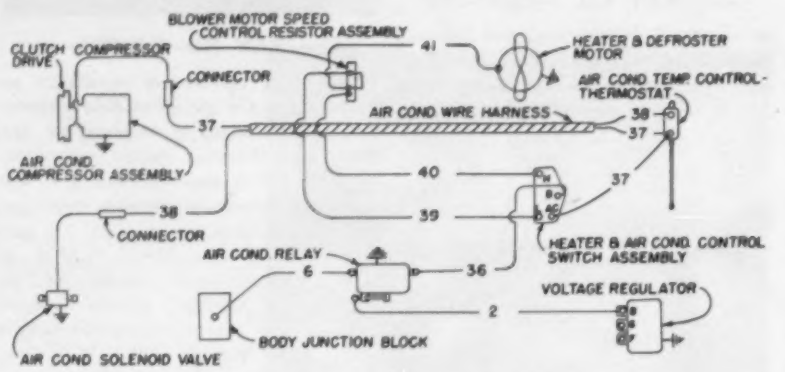


FIG. 11—Wiring diagram of system on 1955 Nash "Rambler."

Causes of this condition can be:

- Condenser air passages clogged.
- Air in system.
- Radiator fan belt slipping.
- Excessive refrigerant charge.
- Engine over-heating.
- Restriction in discharge line.
- Restriction in outlet lines of condenser.
- Restriction in check valve.
- Restriction in receiver.
- Super-heat setting of expansion valve too high.

Compressor noisy with low suction pressure.

Too much oil is probable cause.

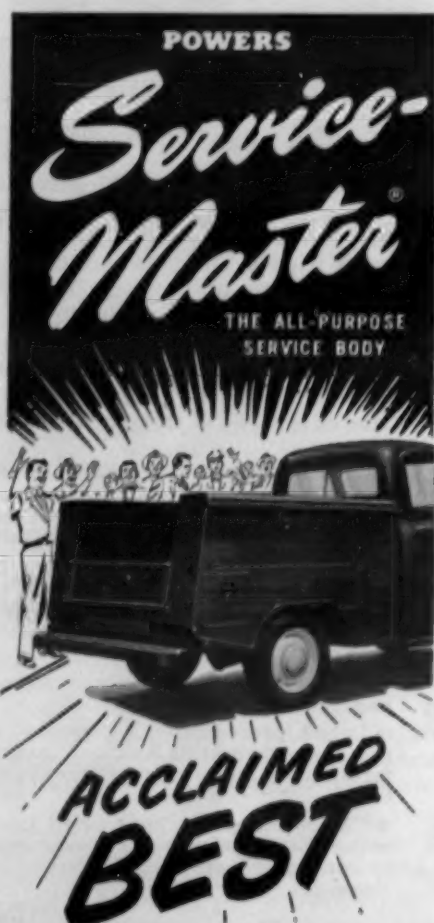
Performance Test

It may be necessary with difficult service problems to conduct a road test and check results against the data given in the accompanying chart. The ambient temperatures and road speed given in the chart should be used. If the ambient temperature varies from the chart, a mean average should be worked out.

Nash suggests that long copper tubes to replace the gauge lines should be fabricated to enable the serviceman to have the gauge set in the car so that he can observe the gauges while the car is being driven. Thermometers should be placed at the air discharge outlets.

Nash Performance Test Data

cut out.		1955 "Ambassador"			
g. Moisture freezing at expansion valve.		Average Discharge			
High suction pressure.	Speed	Ambient	Air	Head	Suction
Possible causes include:	(Mph.)	Temp.	Temp.	Pressure	Pressure
a. Leaky or broken compressor valves.	30	80°	47°	148	22
b. Low refrigerant charge.	30	85°	48°	150	22
c. Clutch slipping.	30	90°	50°	155	22
d. Loose drive belts.					
e. Faulty expansion valve.	30	80°	52°	160	22
Low head pressure.	30	85°	53°	180	22
Possible causes include:	30	90°	54°	200	22
a. Low refrigerant charge.					
b. Leaky or broken compressor valves.	30	80°	45°	148	20
	30	85°	48°	160	20
High head pressure.	30	90°	53°	175	20



BY AIR CONDITIONING AND REFRIGERATION CONTRACTORS

Sales records prove that Service-Master is used by more service men than any other body. Service-Master makes work easier . . . saves more time . . . builds greater profits!

EXTRA FEATURES!

"Freeze-free" hinges that can't bind • Concealed fenders to protect compartment walls • "Hi-Le" floor for easier loading • "No-Bounce" bins to keep parts in place • "Puddle-Proof" cargo area . . . and many other "extras".



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625 CEDAR ST. - BERKELEY 10, CALIF.

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Company _____
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FEB. 13th

UNARCO it tells all about UNARCO

UNARCO \$100,000.00 DEALER PLUS PLAN

3 'Dealerama' Caravans Lehigh Ups Output-- Show '56 Eureka Williams Heating, Cooling Lines

BLOOMINGTON, Ill. — New 1956 heating and air conditioning lines of Eureka Williams Corp. are currently being introduced to dealers through three "Dealerama" caravans touring the east, midwest, and west, it was announced recently.

The three vans, each carrying 25 to 30 pieces of equipment, hit the road late in January, making their first stops on Jan. 30, Gleason said. They will continue their series of one-night stands until March 16, hitting a total of 63 cities in 26 states.

In each city, all heating and air conditioning dealers are invited to see the new lines.

Product details and advertising and merchandising plans are outlined by representatives.

The eastern caravan will appear in cities, in Pennsylvania, New York, New Hampshire, Massachusetts, Maine, Connecticut, New Jersey, Maryland, Virginia, North Carolina, and Tennessee.

The midwestern caravan has scheduled appearances in Illinois, Indiana, Kentucky, W. Virginia, Ohio, Michigan, and Wisconsin.

The western caravan will tour Iowa, Minnesota, Wisconsin, North Dakota, South Dakota, Nebraska, Colorado, Kansas, and Missouri.

(Concluded from Page 1, Col. 2)

and improvements are a new forged steel counterbalanced crankshaft which gives greater strength, durability, and balance; a newly-designed reinforced base and mounting plate for greater rigidity and quieter operation; and a newer lightweight oil pump cover plate.

A notable reduction in weight has been achieved with the V-93 compressor. It weighs only 31½ lbs., including service valves and oil charge. The new model also contains a force feed lubrication system throughout, and is capable of speeds up to 6,000 r.p.m.

Lehigh engineers explain that the high speed capabilities of the V-93 are obtained through the use of light weight aluminum alloy materials for connecting rods, pistons, cylinder heads, and the fact that all moving parts including the seal are under constant force feed lubrication.

100-Ton Air Conditioner To Be Installed at Airbase

OKLAHOMA CITY—Kay Engineering Co. here was the low bidder for air conditioning the Administration Office at Tinker Air Force Base, with a price of \$51,013.

The proposed system is a 100-ton chilled water job, with water coils in 10 existing units, piping, wiring, and pneumatic control.



COMPACT installation of dual compressors on "Stowaway" air conditioner is shown with top panel and exhaust louvers removed. John W. Norris, Lennox president, points out the "Power Prop."

CUTAWAY of "Stowaway" attic installation shows unit with exhaust louvers removed for mounting in opposite gable of house. "Power Prop" pulls outside air through wall opening and condenser coils, exhausting it into attic area. Extra rain-water drain pan is not needed since condenser provides rain trap.



Lennox Offers \$300 Home Unit--

(Concluded from Page 1, Col. 2)

Most outstanding is the "Power Prop" condenser fan developed by Lennox engineers. An axial flow fan, it has six overlapping balanced steel blades that are claimed to move 25% more air at 10% less electrical cost than a comparable centrifugal blower.

'Power Prop' Condenser Fan Is New Feature

Air movement is said to be quiet, smooth, and without vibration. The Power Prop is claimed also to take up much less space than a centrifugal blower; in larger units, only half the space.

Because the Power Prop means extra-large condenser capacity, Norris asserted, the Stowaway will use less electric power than the same size of water-cooled air conditioner equipped with a cooling tower.

'Power Prop' Pulls Air Through Coils

Instead of blowing air over the condenser coil, the Power Prop pulls air through the coil Norris said. In this way, the coil itself is used as a rain trap to keep the unit and its electrical components dry during the hardest downpour.

Air is exhausted through rain-proof louvers at the sides of the unit. Since air is not pulled in through them, their deep, overlapping design permits unrestricted air flow, Norris explained. The design also vents exhaust air away from the condenser to prevent cooling loss due to recirculation, he added.

Other advantages of pulling the air through the coil instead of blowing it over the coil were

cited by Norris. There is no danger of the prop's windmilling in the reverse direction due to wind blowing through the condenser when the unit is not operating, he said. The Stowaway can be mounted head-on into the prevailing wind without fear of the Power Prop being started in reverse. This actually results in a gain in air volume over the condenser coils, he asserted.

Air-borne debris will also be stopped by the condenser where it can be easily removed and not drawn into the compressor chamber.

2 Hermetic Compressors Reduce Costs Up to 15%

Another feature of the Stowaway that reduces operating costs by as much as 15%, Norris said, is the use of two hermetic compressors. One runs continuously for normal cooling loads and the other is "on call" for extra-hot days and party nights.

Using two compressors, he indicated, eliminates ups and downs in temperature and hu-

midity caused by intermittent operation of a single compressor, reduces noise, and puts less starting strain on the electrical circuit.

For protection from the elements and for minimum maintenance, evaporator, condenser, and dual compressors are fused into a hermetically-sealed unit. The cabinet, made of heavy galvanized steel coated with baked-on enamel, is weatherproofed for outdoor installation.

2-Ton Unit Produces 23,300 B.t.u.

The 2-ton Stowaway, Norris said, will produce 23,300 B.t.u. at standard ASRE conditions, with 30% latent capacity.

Three-ton and 5-ton units will be available soon, Norris said, and a unit of 8 or 10-ton capacity is currently being tested.

Norris announced that the Power Prop is also being used in the Lennox air-cooled compressor-condenser units for remote air conditioning. The 7½-ton equipment, he said, features two Power Props belt-driven from a single ¾-hp. motor.

Damper Changes Automatically from Heating to Cooling

Norris further announced a new automatic damper that changes automatically from heating to cooling. Air pressure alone from the blower does the job.

When the thermostat is flicked from heating to cooling, operation of the air conditioner blower opens the vanes on the air conditioner half of the damper and closes the vanes on the other half to bypass the inoperative unit.

The damper vanes remain open until the furnace blower comes on, either at the start of the heating season or during off-season cold spells. Then the air conditioner side of the damper closes and the furnace side opens automatically.

The vanes turn easily in nylon bearings so no damper motor or linkage is required, Norris said.

WASHINGTON PROBLEMS BOTHER YOU?

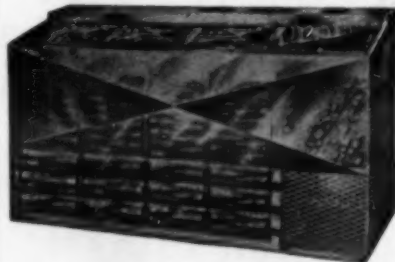
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"A CASE OF COOL JUDGMENT"



FLO-COLD DRINKMASTER STAINLESS STEEL CUBER — COOLER.

SOLD THRU DEALERS ONLY
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United Frigorator Engrs.
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Over 10,000 (count 'em!) items, shown and priced:

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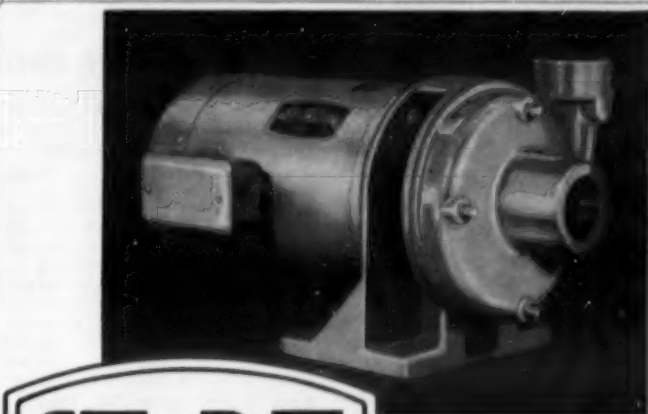
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STA-RITE

the ONE pump

designed to cut costs of
**AIR CONDITIONING INSTALLATION
AND MAINTENANCE**

You and your customers get more for your money with Sta-Rite. First cost is usually lower than comparable pumps. More—check cost per gallon delivered. Cost of installation. Cost of maintenance. Yes, and check cost against the expected life of the pump. Sta-Rite pumps give you clear-cut superiority. You see it the way we make bronze impellers, the full-power, ball-bearing, capacitor-type motors, the leak-proof mechanical seal, the one-piece corrosion-resistant shaft.

Ask your wholesaler. Also write for copy of new bulletin describing Sta-Rite Air Conditioning Pumps.

STA-RITE PRODUCTS, INC.

701 S. Eighth Street, Delavan, Wisconsin
Los Angeles, Calif. • Chamblee, Ga.
In Canada: STA-RITE Pumps (Canada) Ltd., Ajax, Ont.



21 NEMA Firms Sell 636,075 Freezers, First 10 Mos. '55

OCTOBER (21 Companies)

Summary for October and First Ten Months, 1955

Electric Farm and Home Freezers—Complete—Sales by Sizes—Units

Farm and home freezers complete with high and low side and cabinet, where 50% or more of the net cabinet capacity is designed for the freezing and/or storage of frozen foods.

Sizes	Domestic	Canadian	Foreign	Total
1. 6 cu. ft. & under)				
Chest Models	*	*	*	*
Upright Models	†	†	†	†
2. 7 and 8 cu. ft. (6.5 to 8.4)				
Chest Models	*1,905	*187	*325	*2,377
Upright Models	†227	†5	†5	†237
3. 9 and 10 cu. ft. (8.5 to 10.4)				
Chest Models	1,004	85	89	1,178
Upright Models	†	†	†	†
4. 11 and 12 cu. ft. (10.5 to 12.4)				
Chest Models	2,175		46	2,223
Upright Models	†9,761	†265	†195	†10,221
5. 13 and 14 cu. ft. (12.5 to 14.4)				
Chest Models	3,903	373	86	4,362
Upright Models	5,029	27	*23	5,083
6. 15 cu. ft. (14.5 to 15.4)				
Chest Models	5,000	217	64	5,281
Upright Models	†	†	†	†
7. 16 and 17 cu. ft. (15.5 to 17.4)				
Chest Models	6,042	39	36	6,117
Upright Models	†4,581	†54	†13	†4,598
8. 18 and 19 cu. ft. (17.5 to 19.4)				
Chest Models	3,674	101	38	3,813
Upright Models	2,794	26	17	2,837
9. 20 and 21 cu. ft. (19.5 to 21.4)				
Chest Models	5,042	363	27	5,432
Upright Models	†	†	†	†
10. 22 cu. ft. (21.5 & over)				
Chest Models	882		3	885
Upright Models	†2,319	†1	†2	†2,322
Total Chest Models	29,587	1,365	716	31,668
Total Upright Models	24,761	378	209	25,348
Total All Models	54,348	1,743	925	57,016

NOTE: Breakdown of one company's data estimated.

FIRST TEN MONTHS, 1955

Sizes	Domestic	Canadian	Foreign	Total
1. 6 cu. ft. & under)				
Chest Models	*	*	*	*
Upright Models	†	†	†	†
2. 7 and 8 cu. ft. (6.5 to 8.4)				
Chest Models	*30,385	*1,431	*2,256	*34,072
Upright Models	†4,374	†69	†120	†4,563
3. 9 and 10 cu. ft. (8.5 to 10.4)				
Chest Models	17,748	729	861	19,338
Upright Models	†	†	†	†
4. 11 and 12 cu. ft. (10.5 to 12.4)				
Chest Models	*46,637	998	1,144	48,779
Upright Models	†77,875	†1,949	†1,623	†81,447
5. 13 and 14 cu. ft. (12.5 to 14.4)				
Chest Models	57,222	3,106	1,199	61,527
Upright Models	56,008	755	1,812	58,570
6. 15 cu. ft. (14.5 to 15.4)				
Chest Models	52,588	1,505	498	54,591
Upright Models	†	†	†	†
7. 16 and 17 cu. ft. (15.5 to 17.4)				
Chest Models	45,712	949	145	46,806
Upright Models	†70,077	†1,182	†431	†71,690
8. 18 and 19 cu. ft. (17.5 to 19.4)				
Chest Models	30,074	1,135	613	40,822
Upright Models	41,151	337	432	41,920
9. 20 and 21 cu. ft. (19.5 to 21.4)				
Chest Models	41,295	1,948	128	43,371
Upright Models	†	†	†	†
10. 22 cu. ft. (21.5 & over)				
Chest Models	5,000	51	36	5,747
Upright Models	†22,554	†17	†161	†22,832
Total Chest Models	336,331	11,852	6,880	355,063
Total Upright Models	272,134	4,360	4,579	281,073
Total All Models	608,465	16,161	11,459	636,075

Participating companies: Admiral Corp.; Ben-Hur Mfg. Co.; Carrier Corp.; Crosley & Bendix Home Appliance Div.; Avco Mfg. Corp.; Deepfreeze Appliance Div.; Motor Products Corp.; Frigidaire Div.; General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Co., Div. of General Electric Co.; Kelvinator Div.; American Motors Corp.; Maytag Co., The; Norge Div.; Borg-Warner Corp.; Philco Corp.; Appliance Div.; Quicfrez, Inc.; Revco, Inc.; Seeger Refrigerator Co.; Servel, Inc.; Sub-Zero Freezer Co., Inc.; Victor Products Corp.; Westinghouse Electric Corp.; Wilson Refrigeration, Inc.; International Harvester Co. (out 10-1-55).

15 NEMA Firms Sell 3,446,282 Refrigerators, First 10 Mos.

OCTOBER (14 Companies)

Summary for October and First Ten Months, 1955

Complete Electric Household Refrigerators Only—Sales by Sizes—Units

Sizes	Domestic	Canadian	Foreign	Total
1. 3 cu. ft. (3.4 & under)				
2. 4 cu. ft. (3.5 to 4.4)	1,037		6	1,043
3. 5 cu. ft. (4.5 to 5.4)	28	35		63
4. 6 cu. ft. (5.5 to 6.4)	2,834		577	3,411
5. 7 cu. ft. (6.5 to 7.4)	7,236	530	1,396	9,162
6. 8 cu. ft. (7.5 to 8.4)	48,840	748	8,062	57,650
7. 9 cu. ft. (8.5 to 9.4)	23,326	729	2,559	26,614
8. 10 cu. ft. (9.5 to 10.4)	31,634	233	1,289	33,156
9. 11 cu. ft. (10.5 to 11.4)	35,077	145	1,418	36,640
10. 12 cu. ft. (11.5 to 12.4)	55,015	283	801	56,099
11. 13 cu. ft. (12.5 & over)	*11,793	*26	*288	*12,107
12. Total	216,830	2,729	16,396	235,945

Refrigerators Having Two Exterior Doors (All Sizes Included in Above)..... 39,295 130 856 40,281

FIRST TEN MONTHS (14-15 Companies)

Sizes	Domestic	Canadian	Foreign	Total
1. 3 cu. ft. (3.4 & under)				
2. 4 cu. ft. (3.5 to 4.4)	15,170		608	15,778
3. 5 cu. ft. (4.5 to 5.4)	401	146	93	640
4. 6 cu. ft. (5.5 to 6.4)	20,585	1	5,078	25,664
5. 7 cu. ft. (6.5 to 7.4)	96,416	6,496	15,004	117,916
6. 8 cu. ft. (7.5 to 8.4)	662,205	9,204	88,128	759,537
7. 9 cu. ft. (8.5 to 9.4)	396,949	11,117	27,650	435,716
8. 10 cu. ft. (9.5 to 10.4)	515,854	17,434	17,296	550,584
9. 11 cu. ft. (10.5 to 11.4)	605,908	7,500	31,821	645,229
10. 12 cu. ft. (11.5 to 12.4)	618,799	6,368	11,815	636,982
11. 13 cu. ft. (12.5 & over)	*248,877	*2,215	*7,149	*258,241
12. Total	3,181,159	60,481	204,643	3,446,282

Refrigerators Having Two Exterior Doors (All Sizes Included in Above)..... 536,780 5,949 12,763 575,492

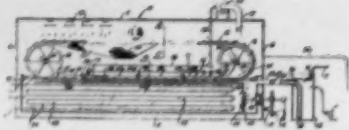
*Combined to prevent possible disclosure.

Participating companies: Admiral Corp.; Crosley & Bendix Home Appliances Div.; Avco Mfg. Corp.; Deepfreeze Appliance Div.; Motor Products Corp.; Frigidaire Div.; General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Co., a Division of General Electric Co.; Kelvinator Div.; American Motors Corp.; Norge Div.; Borg-Warner Corp.; Philco Corp.; Appliance Div.; Quicfrez, Inc.; Seeger Refrigerator Co.; Servel, Inc.; Westinghouse Electric Corp.; International Harvester Co. (out 10-1-55).

PATENTS

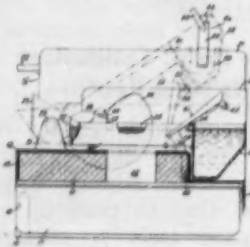
Week of Sept. 20
(Concluded)

2,718,134. ICE CUBE APPARATUS AND METHOD. Thomas B. Gilliam, San Francisco, Calif. Application June 1, 1953, Serial No. 358,761. 14 Claims. (Cl. 62-106.)



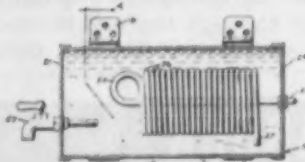
5. Ice cube producing apparatus comprising a closed path conveyor belt having parallel and horizontally disposed upper and lower reaches, said belt being formed of a plurality of articulated sections having formed therein a plurality of open-top mold cavities, means for immersing the mold cavities of the lower reach of said belt in a refrigerating medium while preventing said medium from entering said cavities, spray means located above the lower reach of said belt and disposed to spray water into the cavities thereof while said cavities are immersed in said medium, heating means disposed above the upper reach of said belt operable to free the ice cubes from the cavities thereof, and a form-inous trough in cube-catching relation to said upper reach adapted to transmit therethrough to said lower reach the liquid droplets formed by said heating means.

2,718,125. AUTOMATIC ICE MAKER. Julius B. Morvay, Erie, Pa., assignor to General Electric Co., a corporation of New York. Application July 13, 1953, Serial No. 367,522. 6 Claims. (Cl. 62-106.)



1. In an ice maker, a frame, a water reservoir pivotally mounted on said frame, means maintaining said reservoir filled to a predetermined level, a refrigerated member, a receptacle adapted for containing a supply of water, a pair of spaced-apart arms connecting said reservoir and said receptacle, at least one of said arms having a trough extending between said reservoir and said receptacle, the bottom of said trough being below said predetermined level of said reservoir, means for pivoting said reservoir, said arms, and said receptacle for moving said receptacle to an elevated position in which said refrigerated member extends into said water in said receptacle for having ice form on said refrigerated member, said receptacle being above said predetermined level of water in said reservoir when in its elevated position whereby excess water in said receptacle flows through said trough to said reservoir, said pivoting means moving said receptacle to a lowered position before said supply of water in said receptacle is fully frozen, said receptacle in its lowered position being below said predetermined level in said reservoir whereby water flows from said reservoir through said trough to said receptacle to replenish the supply of water in said receptacle, and means to heat said refrigerated member to release ice formed thereon.

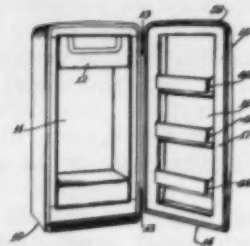
2,718,127. REFRIGERATOR WATER COOLER. J. C. Minor, College Park, Ga. Application Dec. 12, 1953, Serial No. 325,605. 2 Claims. (Cl. 62-141.)



1. In a refrigerator, a water cooler comprising a reservoir for water, means securing said reservoir to the inside surface of a side wall of a refrigerator, a multiple coiled conduit disposed in said reservoir, said conduit being coiled along an axis extending from the back wall toward the front wall of the reservoir, the forward end of the conduit being bent back rearwardly and extending through the coiled conduit, through the back wall of the reservoir, and through the wall of the refrigerator, said conduit end being adapted to be connected to the water supply, the rear end portion of the conduit extending downwardly and opening into the rear portion of the reservoir, whereby water passing through the conduit is precooled, and a spigot mounted in the front wall of the reservoir and being accessible from the front of the refrigerator, whereby the water from the rear portion of the reservoir must flow forwardly along the coiled conduit in order to be discharged from said spigot.

the rear portion of the reservoir, whereby water passing through the conduit is precooled, and a spigot mounted in the front wall of the reservoir and being accessible from the front of the refrigerator, whereby the water from the rear portion of the reservoir must flow forwardly along the coiled conduit in order to be discharged from said spigot.

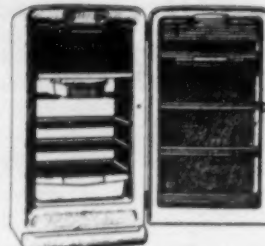
2,718,446. REFRIGERATOR DOOR AND SHELF STRUCTURE. Lester H. Hinkel, Evansville, Ind., assignor to International Harvester Co., a corporation of New Jersey. Application Nov. 20, 1951, Serial No. 257,362. 6 Claims. (Cl. 312-214.)



1. A refrigerator door comprising, an outer pan and an inner liner spaced therefrom with insulating material therebetween, the edges of said inner liner being spaced inwardly from the edges of said outer pan, a plurality of brackets mounted to said edges at the corners of said inner liner and said outer pan for mounting said inner liner to said outer pan and means for bridging across said edge portions and for providing for portions of a number of storage shelves, said means comprising a frame member having the outer edges thereof in engagement with the edges of said outer pan and the inner edges thereof in engagement with the edges of said inner liner, said inner liner being formed with a number of horizontal projections, said frame member further being formed as a unitary structure having transverse channels which cooperate with said projections to form a number of storage shelves.

DESIGNS

175,647. REFRIGERATOR. Carl Reynolds, Jr., Birmingham, Mich., assignor to Avco Mfg. Corp., Cincinnati, Ohio, a



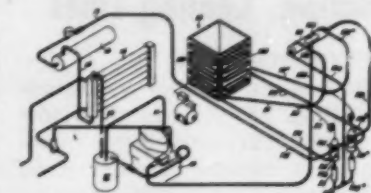
corporation of Delaware. Application July 30, 1954, Serial No. 31,682. Term of patent 14 years. (Cl. D67-3.)

Week of Sept. 27

2,718,762. LOW-TEMPERATURE STABILIZED REFRIGERATING SYSTEM. Robert C. Webber, Indianapolis, Ind. Application July 7, 1952, Serial No. 297,406. 7 Claims. (Cl. 62-3.)

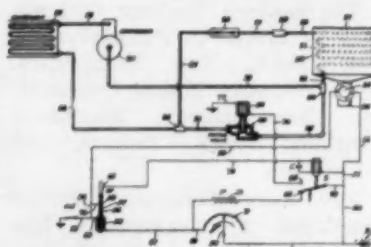
5. In a low temperature refrigerating system which includes a thermostatically-controlled valve controlling flow from the receiver to the evaporator, said valve being dominated by an expansible fluid subject to the tempera-

ture of refrigerant fluid flowing from the evaporator toward the compressor and acting upon a movable chamber wall mechanically connected to said valve, the invention which comprises means for impressing upon the fluid



in said chamber the temperature of refrigerant flowing from the receiver toward said valve, and means for bringing the refrigerant flowing toward said valve subsequently into heat-exchange relation with refrigerant flowing from the receiver toward said valve, and means for bringing the refrigerant flowing toward said valve subsequently into heat-exchange relation with refrigerant flowing from said evaporator toward said compressor.

2,718,763. SPACE COOLING SYSTEMS FOR AUTOMOBILES. Everett H. Burgess, Elmwood Park, Ira S. Gardner, New Lenox, and George M. Egart, Park Ridge, Ill., assignors to Vapor Heating Corp., Chicago, Ill., a corporation of Delaware. Application Feb. 25, 1953, Serial No. 338,558. 2 Claims. (Cl. 62-3.)



1. The combination with means for delivering cooled air into a closed passenger compartment of an automobile comprising a closed refrigerant path including an evaporator connected therein in heat exchanger relation to air passed therethrough and into said passenger compartment, a motor driven compressor for withdrawing refrigerant from said evaporator and delivering it into a condenser, and an expansion valve interposed between said condenser and the evaporator for restricting the delivery of the compressed refrigerant to the evaporator, of control means for automatically regulating the temperature of air within said compartment, said control means comprising a normally open by-pass valve operatively connecting the condenser with the inlet side of the compressor so as to normally by-pass refrigerant around said expansion valve and evaporator, a solenoid operable upon energization thereof to close said valve, means including a thermostat responsive to a predetermined temperature within said compartment for closing an energizing circuit through said valve solenoid to close the valve, an electrical heater for applying auxiliary heat to said thermostat to adjust its temperature setting, an energizing circuit for said heater including a variable resistor for varying the amount of electrical current supplied to said heater to adjust the temperature setting of said thermostat, and a second electrical circuit effective upon the opening of the thermostat to direct additional electrical current to said heater to increase the heating effect thereof.

(To Be Continued)

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Government Contracts

ARMY

Corps of Engrs., U. S. Army, Seattle District, 4735 East Marginal Way, Seattle 4, Wash.
RELOCATION OF HEATING AND VENTILATING UNITS, Fairchild Air Force Base, Washington. The work involves relocation of existing heating and ventilating units in the multi-purpose hangars, six lean-to additions, approx 14 x 7 x 15 are to be constructed to house the relocated facilities.—Job—IFB ENG-45-108-56-128B—Bid Opening 23 Feb 56.

Purchasing Branch, Fort Monroe, Va.
INSTALL AIR CONDITIONING in Bldgs 11, 133, and 134 at Fort Monroe, Va. IFB 44-036-56-20B—Bid Opening 21 Feb 56.

Corps of Engineers, U. S. Army, Office of the District Engineer, Philadelphia District, 2635 Abbottsford Ave., Philadelphia, Pa.
CONSTRUCTION OF ADDITIONS to the heat distribution system at Dover Air Force Base, Del.—Job—IFB ENG-36-109-56-33—Bid Opening 2 Mar 56.
CONSTRUCTION OF ADDITIONS TO HEAT DISTRIBUTION SYSTEM at Dover Air Force Base, Del.—Job—IFB ENG-36-109-56-55—Bid Opening 2 Mar 56.

Central Purchasing Office, Fort Knox, Ky.
INSTALLATION OF AIR CONDITIONING in Service Club Nr 2 and Library Nr 1, Fort Knox, Ky.—Job—IFB AII-15-014-56-97—Bid Opening 17 Feb 56.

Purchasing and Contracting Office, Attn: Purchasing Section, Fort Bliss, Tex.
REPLACEMENT OF FORCED WARM AIR FURNACES, Fort Bliss, Texas.—Job—IFB AIV-41-014-56-97B—Bid Opening 24 Feb 56.

Purchasing and Contracting Office, Pennsylvania Military District, Indiantown Gap Military Reservation, Pa.
INSTALLATION OF AIR CONDITIONING SYSTEMS IN THEATERS Number 2 and 3, Indiantown Gap Military Reservation, Pa.—Job—IFB 36-214-56-19B—Bid Opening 24 Feb 56. Bid Sets available until 17 Feb 56, unless previously exhausted.

NAVY

Navy Purchasing Office, 4th & Independence Ave., Washington, D. C. SPF-1A.
AIR CONDITIONING UNIT with Condensing Units.—1 ea.—IFB 600-847-56—Bid Opening 13 Feb 56.

The following items are under IFB 600-833-56.—Bid Opening 14 Feb 56.
AIR CONDITIONING UNIT, 1/2 HP, Metal Cabinet, Min. 8000 BTU Capacity.—71 ea.—SAME, EXCEPT 1 HP, Min. 11000 BTU—6 ea.—Spec MIL-A-16321A.

Officer in Charge, Navy Purchasing Office, Naval Supply Center, Norfolk, Va.
Following items are procured under IFB-189-229-56.—Bid Opening 14 Feb 56.
REFRIGERATORS, ELECTRIC, Type I, Domestic, Door to Swing Right Hand, 18 ea.—REFRIGERATORS, ELECTRIC, Type I, Domestic, Door to Swing Left Hand, 27 ea.—Above items Spec AA-R-211C.—RANGES, ELECTRIC, Domestic, Type I, 36 in. wide, Spec W-R-101B, 45 ea.

AIR FORCE

Purchasing and Contracting Office, McClellan Air Force Base, McClellan, Calif.
4AAA-106515 CONDENSING UNIT REFRIGERATION 3 HP approx 17466 BTU—HT Cap Air Cooled, open type designed for freon 12 Refrigerant Elec Motor Driven AC 220-400V 60 Cys 3 Phase, Complete W-Motor and comp spec MIL-R-10137. Appl masterfreeze prefab walk-in sectional refrigerator standard temp.—3 ea.—IFB 40-606-56-309.—Bid Opening 14 Feb 56.

Purchasing and Contracting Office, Sheppard Air Force Base, Texas.
REPAIR EVAPORATIVE COOLERS on hospital buildings (Rev 1) Sheppard Air Force Base, Texas.—Job—IFB 41-612-56-50-B.—Bid Opening 24 Feb 56.

Purchasing and Contracting Office, Shaw Air Force Base, S. C.
Following items are procured under IFB 38-601-56-67B.—Bid Opening 24 Feb 56.
AIR CONDITIONING RADAR SURVEILLANCE CONTROL HOUSE.—Job—Contracting Officer, Mobile Air Material Area, Brookley Air Force Base, Ala. INSTALL AIR CONDITIONING SYSTEM, Building 417, Brookley Air Force Base, Ala.—Job—IFB-01-601-56-267.—Bid Opening 16 Feb 56.

Purchasing and Contracting Office, Whiteman Air Force Base, Sedalia, Mo.
AIR CONDITIONING, Base Headquarters, Whiteman AFB, Sedalia, Mo.—Job—IFB 23-606-56-57.—Bid Opening 15 Feb 56.

Purchasing and Contracting Office, Mather Air Force Base, Calif.
AIR CONDITIONING OF WARD, Bldg. 1668, Mather Air Force Base, Calif.—Job—IFB 40-612-56-25.—Bid Opening 14 Feb 56.

GENERAL SERVICES ADMINISTRATION

General Services Administration, Region 7, Business Service Center, 1114 Commerce, Dallas, Texas.
AIR CONDITIONING, FEDERAL OFFICE BUILDING, New Orleans, La.—Job—IFB RPC-R7-3.—Bid Opening 2-14-56.

General Services Administration, Region 3, Business Service Center, 7th and D Sts., S.W., Washington 25, D. C.
FANS, EXHAUST, SINGLE SPEED, 115 Volts, 60 Cycles, Single Phase, Emerson No. 8608DO, or equal.—30 ea.—IFB R2-H-70461-R.—Bid Opening 2-7-56.

REPAIRING AIR CONDITIONING EQUIPMENT, U. S. Post Office, Court House and Custom House, Newport News, Va.—Job—IFB GS-R3-B-4007.—Bid Opening 2-14-56.

AIR CONDITIONING, PENTAGON BLDG., Arlington, Va.—Job—IFB GS-R3-B-4071.—Bid Opening 2-14-56.

AIR CONDITIONING UNITS, 1 HP Portable, 10000 BTU Capacity, in accordance with Federal Specification OO-A-372 and Amendment No. 1.—18 units.—IFB R2-D-72515-R.—Bid Opening 2-14-56.

U. S. ATOMIC ENERGY COMMISSION

Procurements of \$1000 or more.

U. S. Atomic Energy Commission, Schenectady Operations Office, P. O. Box 1069, Schenectady, N. Y.
PACKAGED AIR CONDITIONER, self contained cabinet type, office type unit for laboratory use, rated as follows: hermetically sealed compressor for operation on 480 volt, 3 phase, 60 cycle power, with water connections for city water and also for cooling tower operation. Fans: 2400 to 3000 CFM, adjustable. Air Diffuser: both front and side adjustable outlets. Filters: throw-away type. Controls: three position switch, (Off, Circulate, Cool) and coil by-pass damper humidity control. Motor starter: overload and undervoltage protection. High pressure cutout. Water regulating valve adjustable for head pressure. Net cooling capacity, 7 1/2 tons.—1 ea.—IFB SCH-372—Bid Opening 2-8-56.

CONTRACTS AWARDED THROUGH JAN. 31, 1956

General Services Administration, Region 5, 219 S. Clark St., Chicago, Ill.
Water Coolers.—490 ea.—\$67,095.—Sunroc Corp., Glen Riddle, Pa.

Chicago Procurement Office, Corps of Engineers, U. S. Army, 226 W. Jackson Blvd., Chicago 6, Ill.
Furnace, warm air, 80000 BTU.—350 ea.—\$67,844.—Contract DA-11-184-ENG-14362 (IFB-56-F-68B).—Ingersoll Conditioned Air Div., Borg-Warner Corp., 600 S. Michigan Ave., Chicago 6, Ill.

FREEZER SALESMEN WANTED NOW!

Sub-Zero Freezer Co., Inc.
Madison Wisconsin

Needs regional salesmen for large productive territories in Mid-West.

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Experience preferred but not necessary.

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Write L. C. Bokke.

Arizona Distributorship Changes Hands

PHOENIX, Ariz.—Sale of Electrical Equipment Co. of Arizona to J. Oliver and Patricia D. Cunningham of Memphis, Tenn., was announced recently by Sam Kahan, president.

Kahan will remain as a director and is retaining a minority interest in the business. Cunningham will become president of the firm and W. A. Somers will continue as vice president and general manager.

Electrical Equipment Co. is the Arizona distributor for Kelvinator and Leonard appliances, Zenith radio and television, Eureka vacuum cleaners,

J. G. Tuthill Named Tuthill Pump Head

CHICAGO—Tuthill Pump Co. announces the election of James G. Tuthill as president, succeeding H. T. Kessler who has retired from active service.



J. G. Tuthill

Grandson of the founder of the company and son of the late chairman of the board, Tuthill joined the company in July, 1953. After serving in various capacities in the organization, he was made vice president in April of last year.

Before joining the company, Tuthill was on active duty with the regular army for five years following his graduation from the U. S. Military Academy in 1948, and held the rank of captain when discharged in 1953.

G-E Names O'Hara to Newly-Created Post

FORT WAYNE, Ind.—Edgar B. O'Hara has been appointed manager of air conditioning, refrigeration, and internal sales, a newly-created post for General Electric's Small Integral Motor Dept. here, it was announced by Gordon T. Graham, manager of marketing.

O'Hara came to Fort Wayne in 1953 as the department's manager of advertising and sales promotion and held that post until his new assignment. He joined G-E in 1946 at Schenectady, N. Y., as a copywriter, and in 1950 became senior project supervisor in visual education.

Marlo Appoints Miller Denver Representative

ST. LOUIS—Marlo Coil Co., manufacturer of air conditioning and heat transfer equipment, has announced the appointment of George Miller as Marlo representative in the Denver area, with offices at 2601 W. 37th Ave., Denver.

Before establishing his own sales engineering firm 3 1/2 years ago, Miller served as an air conditioning contractor, traveling representative for a compressor manufacturer, service manager, and manager of a refrigeration and air conditioning wholesale firm.

Carrier Declares Dividends on Stock

NEW YORK CITY — Dividends on the common and preferred stocks of Carrier Corp. were declared here recently by the board of directors.

Payments will be made of 60 cents per share on the common

stock, payable on March 1, 1956, to holders of record at the close of business on Feb. 15, 1956, and a dividend of 56 1/4 cents per share on the cumulative preferred stock 4 1/2% series, \$50 par value.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications \$10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

SALES MANAGER, 9 years' experience, 7 years in sales, application and service of heating and air conditioning equipment. Desires position with manufacturer or distributor. Prefer east or midwest location. Age 37, married, engineering college graduate. BOX A5442, Air Conditioning & Refrigeration News.

SALES ENGINEER—26 years' experience in sales, engineering, installation and service of air conditioning and commercial refrigeration equipment. Desires to re-locate in Rocky Mountain or Southwest area. Prefer sales, but will consider service or both. Will only consider offer with definite prospects for future advancement. BOX A5443, Air Conditioning & Refrigeration News.

AIR CONDITIONING and refrigeration serviceman would like year-round job with good distributor. Have 9 years' experience servicing and installing. Also have heating experience. Will appreciate and answer any inquiry with more detailed information. BOX A5444, Air Conditioning & Refrigeration News.

EXPERIENCED ENGINEER — BSME. Seventeen years' experience in sales, estimating, design, installation and service of air conditioning, heating, and commercial refrigeration. Will consider travel. Age 45, married. Available immediately. BOX A5447, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

WANTED—EXPERIENCED wholesale refrigeration and air conditioning parts salesman. Top salary to top man. Permanent position open at once. Apply to Mr. Maquire, ACE REFRIGERATION SUPPLIES, Inc., 46 N.W. 36th Street, Miami, Florida, Phone 82-1553.

DESIGN ENGINEER experienced in commercial refrigeration. Capable of handling complete projects from original design into production. Opportunity to grow with rapidly expanding old established manufacturer of freezer and standard temperature equipment, for food markets. Only top grade man with proven ability will be considered. All replies will be confidential. Write—Wm. Fogel, President, FOGEL REFRIGERATOR COMPANY, 5400 Eadom Street, Philadelphia 37, Pa.

COMMERCIAL REFRIGERATION industry leaders are on record as predicting volume increases for 1956 on top of record-breaking 1955. Our own plans call for intensified sales effort nationally, backed by our strongest-ever advertising program. We're confident that our own top-volume 1955 will be surpassed this year. If you'd like to join an aggressive organization, old in experience but with youthful management, as a zone sales manager, write us a brief history of yourself with a snapshot. We've a better line of supermarket display refrigerators where individual sales run into big figures, plus a supplementary line of equipment for smaller food markets, taverns, restaurants, hotels, etc. Our basis of remuneration is tops in the industry. Your earnings are limited only by your ability to get volume out of our established outlets. It's time now to act to take full advantage of what we offer you. SHERER-GILLET CO., Marshall, Michigan.

MANUFACTURERS' REPRESENTATIVE with commercial refrigeration experience, now covering Michigan, Indiana, Midwestern or Southwestern states, to sell fast-growing line of commercial equipment. Write PAUL R. STEWART, 1712 John Street, Cincinnati 14, Ohio.

DISTRIBUTORS AND manufacturers' representatives wanted to carry Rovon All-Electric truck refrigeration units for dairy, meat and other local and regional delivery trucks. Several valu-

able territories open for Rovon All-Electric refrigeration units and Certified-Air dairy and beverage cases and air conditioners. Write BOX A5423, Air Conditioning & Refrigeration News.

WANTED: EXPERIENCED commercial refrigeration field man to contact dealers in Indiana and Michigan. Salary, bonus and expenses. This can lead to an executive position with well established manufacturer. Give details of experience, earning requirements and business references. Write BOX A5438, Air Conditioning & Refrigeration News.

LEADING NATIONAL manufacturer of air conditioning and refrigeration equipment has opening on staff for experienced top grade sales engineer to promote and sell large horsepower, prestige type installations to owners, architects and contractors. Present and future growth opportunities unlimited. Chicago or midwest location. Salary and commission plan commensurate with experience and opportunities. Write complete resume of education, experience and salaries which will be treated with confidence. Personal interviews will be arranged. Reply BOX A5445, Air Conditioning & Refrigeration News.

MANUFACTURERS' REPRESENTATIVES wanted — Choice territories available for experienced men in commercial refrigeration as manufacturers' representatives with live wire company producing good quality display cases. Will consider men in related fields. Write BOX A5446, Air Conditioning & Refrigeration News.

MANAGER OF parts department for large Detroit area refrigeration supply company to handle ordering and act as head counterman. Good salary and opportunity. BOX A5449, Air Conditioning & Refrigeration News.

FIELD SERVICE engineer required by food store fixture manufacturer. Must be free to travel, with 10 or more years' experience in commercial refrigeration and electricity necessary. Salary, expenses, life insurance, hospitalization insurance and other benefits. 30 to 40 years of age. Willing to move when the need arises. This company is growing and expanding its operation every year. Send photo and full facts regarding work experience, age, family status, etc. Reply to BOX A5450, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

NEW COMPRESSORS — well-known brand 7 1/2 h.p. hermetic, spring mountings, model PH750A, Freon 22, \$289.00. Air cooled condensing coils—New well-known brand, 4 row, copper tube, 8 aluminum fins per inch, 60" x 22" \$151.75. Cooling coils—New well-known brand, copper tube, 3 row, 8 aluminum fins per inch, 24" x 36" \$91.00. Fan blades—new well-known brand 24" dia., 4 blade aluminum, 4500 c.f.m. at 1140 r.p.m., \$6.95. LIGHTHOUSE, INC., 1775 East 90 Street, Cleveland 14, Ohio. Cherry 1-7697.

AIR CONDITIONING value: 3 h.p. hermetic compressor F-12 230V, 1/phase HD200, 2 h.p. air cond. evaporator 23 1/2" L x 16" H x 3 1/2" W, 2 h.p. air cond. condenser 24" L x 24" H x 4 1/2" W. Also included 2 ton F-12 T. X. Valve & dual pressure safety cutout switch. Complete matched component kit as described \$179.50, FREIGHT PREPAID anywhere in the continental U. S. A. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

BUSINESS OPPORTUNITIES

COMMERCIAL REFRIGERATION & air conditioning business, in fast growing city of Colorado. Good franchises available. Will gross \$70,000 and up per year, as small operation. Priced under \$9,000, can finance. Inquire BOX A5448, Air Conditioning & Refrigeration News.

MISCELLANEOUS

"SEALED UNIT Rebuilding-Basic Tools & Methods"—an instructive copyrighted manual giving complete details on economically equipping your shop to handle hermetic rebuilding. Exclusive trade secrets unavailable elsewhere. Mail postcard for descriptive folder. H. W. CUSTER, P. O. Box 98 Center Line, Michigan.



C. M. EHRHARDT



DAVID B. DELL

Marvair Line--

(Concluded from Page 1, Col. 4)
B.t.u./hr. With the present 2-ton and 3-ton models, they will round out a complete line of remote models, Smith said.

Each model includes a condenser-compressor section that may be installed anywhere within an average of 60 ft. of the evaporator or cooling section. For one-story stores or plants the condenser unit may be placed on the roof.

OVERSIZE AIR COIL USED IN CONDENSER

An oversize air coil in the condenser gives excellent heat exchange performance up to 120° outside temperature, Smith claims.

The compressor is housed in an insulated cabinet with the condenser section, cutting the sound level to a whisper. Use of a sirocco-type fan further reduces the noise. All controls are in watertight housings within the condenser cabinet.

The evaporator section of all Marvair remote models features 4-row coil assembly, giving extra large cooling areas and proper dehumidification at all normal temperatures, said Smith.

Two types are offered: the horizontal air-flow and the vertical air-flow ("A"-type).

'A' TYPE INSTALLS ABOVE OR BELOW FURNACE

The "A"-type is installed directly above or below any warm-air furnace and requires no separate blower or filters. It is adaptable to any counterflow or upflow furnace.

The horizontal air-flow unit may be located in the main furnace duct, in an attic or closet using its own ductwork, or—with filter and blower—as a free-hanging unit. Suspended from the ceiling it has the advantage of occupying no floor space.

Four-way louvers direct the cool air output in any desired manner.

All present Marvair remote air conditioners have received the official approval of Underwriters' Laboratories, Inc., or are in process of examination for the "UL" seal, Smith reported.

New models are being designed to conform to UL standards and are being submitted for UL approval, he said.

Air Pollution Symposium--

(Concluded from Page 1, Col. 5)
atmospheric conditions on the health of humans, stated that on the basis of some research studies he has been making, the incidence of lung cancer would seem to be much greater in city dwellers who drive an automobile more than 12,000 miles a year. (If this is so, it would seem to provide a strong sales argument for automobile air conditioning.)

2-WAY ALLEVIATION

Air cleaning equipment and air conditioning systems serve to alleviate the problem in two ways, it was pointed out by J. W. May, research director for American Air Filter Co., Inc.

Installation of air cleaning and dust control equipment can reduce air pollution or smog at its source, May pointed out.

There is a variety of equipment available for such purposes: dry centrifugal separator type dust collectors; ultrasonic conglomerators; wet collectors and air washers; fabric arresters, and electrostatic precipitators.

The electrostatic precipitator is a highly efficient collector of dust particles, and also takes care of some of the sub-micronic contaminants, and operates efficiently over a wide range of temperatures. However, it may be somewhat effected by high humidities.

Removal of air contaminants in habitable places can be accomplished by the proper type of air cleaning and air handling equipment. The conventional dry-type of filter will remove all classes of dust particles and some of the products of combustion, May said, but it will

not handle vapors or sub-micronic contaminants.

Best method for the residential, commercial, or industrial establishment to keep out as much of the polluted and contaminated air as possible is to make use of an activated carbon filter, placing it behind a conventional dry-type filter or electrostatic precipitator in the incoming air stream.

May said that improvements in air filtering equipment are such that it is quite possible that devices will be developed that will filter disease-causing viruses from the air.

Other speakers included officials in the air pollution and public health fields, who discussed the problems from various angles. They pointed out that man is an animal whose lungs developed in a much cleaner and simpler atmospheric environment than he encounters today, and that the change came

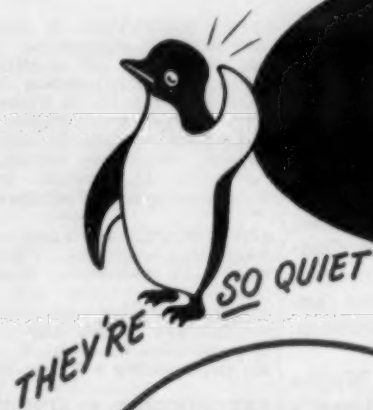
in such a relatively short time that Nature has not been able to adjust him to that environment, which is why air pollution is not only an irritant, but an actual danger to health.

GASOLINE VAPORS CREATE HEALTH HAZARD

Gasoline vapors which oxidize after being burned result in sub-micronic pollutants which constitute the greatest hazard to public health, it was pointed out.

That activated carbon filters will minimize the adverse effects of such pollutants has been proved by tests made with plant life, under carefully controlled conditions.

Dr. Mills also told the symposium that his air conditioned home, which is kept under a positive pressure, has provided a "contaminant free atmosphere" even though it is located in a highly industrialized area.



NEW 'BC' UNITS EXTEND RANGE OF BUSH AIR COOLED CONDENSERS to 20 TONS...



NEW Bush 'BC' Blower Condensers permit air conditioning and refrigeration systems to operate without water . . . provide the answer to excessive water costs, limited supply, excessive impurities or disposal problems.

Available in capacities up to the 20 Tons, new Bush 'BC' Blower Condensers feature low noise level . . . quiet operation.

Patented Inner-Fin coil construction, a Bush exclusive, makes these the most compact units on the market. Units are easy to install, have rugged all-steel cases with durable rust-resistant finish . . . are available arranged with either blower fan or propeller fan.

The BUSH line of water-savers, most complete in the industry, also includes:

'CDT' COPPER DECK COOLING TOWERS with all copper decking.
'IEC' INNER-FIN EVAPORATIVE CONDENSERS featuring patented inner-fin coils. Both units available with blower or propeller fan. Capacities from 3 to 90 Tons.

'PFC' PROPELLER FAN CONDENSERS — Two basic models, 2.2 Tons and 3.3 Tons can be combined by mounting in banks to obtain any desired tonnage.

'PS' PRESSURE STABILIZERS — automatically maintain satisfactory head pressure when air cooled condensers operate outside in low ambient temperatures.



MARSH Instruments

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.

PRESSURE GAUGES and Dial Thermometers for all services.

MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves.

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